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From: Kelly Nolan at That's Great News [Kelly@mail.thatsgreatnews.com]
Sent: 1/18/2019 5:26:58 PM
To: Grevatt, Peter [Grevatt.Peter@epa.gov]
Subject: Congratulations, Peter you're featured in the article Water Research Foundation Names New Chief Executive Officer

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Article

Water Research Foundation Names New Chief Executive Officer

Featured

Peter Grevatt Water Research Foundation

Publication

Florida Water Resources Journal

Published

01/01/2019

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Appointment

From: Ross, David P [ross.davidp@epa.gov]
Sent: 6/11/2018 6:14:55 PM
To: Ross, David P [ross.davidp@epa.gov]; Mayer, Lauren [mayer.lauren@epa.gov]; Lape, Jeff [lape.jeff@epa.gov]; jaustin@tfgnet.com; Sawyers, Andrew [Sawyers.Andrew@epa.gov]; Grevatt, Peter [Grevatt.Peter@epa.gov]; Nagle, Deborah [Nagle.Deborah@epa.gov]; Forsgren, Lee [Forsgren.Lee@epa.gov]; Goodin, John [Goodin.John@epa.gov]
CC: Penman, Crystal [Penman.Crystal@epa.gov]; Huber, Patrick [Huber.Patrick@epa.gov]; Connors, Sandra [Connors.Sandra@epa.gov]
Subject: FW: Meeting with Water Research Foundation
Attachments: Real ID Information.pdf; Water Resources Congressional Summit TPv2.docx; MEETING REQUEST - WRF - EPA - Ross, Forsgren - 03-2018.doc
Location: 1201 Constitution Ave NW, Washington DC 20460 WJCE 3233 Please call 202-564-5700 for escort
Start: 6/19/2018 6:00:00 PM
End: 6/19/2018 6:30:00 PM
Show Time As: Busy

The group from the Water Research Foundation has arrived and David Ross has agreed to start a little early, I am getting the folks now and taking them to 3233 WJC East

-----Original Appointment-----

From: Penman, Crystal **On Behalf Of** Ross, David P
Sent: Monday, January 29, 2018 2:55 PM
To: Ross, David P; Mayer, Lauren; Forsgren, Lee; Lape, Jeff; jaustin@tfgnet.com; Goodin, John; Sawyers, Andrew; Grevatt, Peter; Nagle, Deborah
Cc: Penman, Crystal
Subject: Meeting with Water Research Foundation
When: Tuesday, June 19, 2018 2:00 PM-2:30 PM (UTC-05:00) Eastern Time (US & Canada).
Where: 1201 Constitution Ave NW, Washington DC 20460 WJCE 3233 Please call 202-564-5700 for escort

Attendees

Jessica Austin – Ferguson Group
John Albert – Water Research Foundation

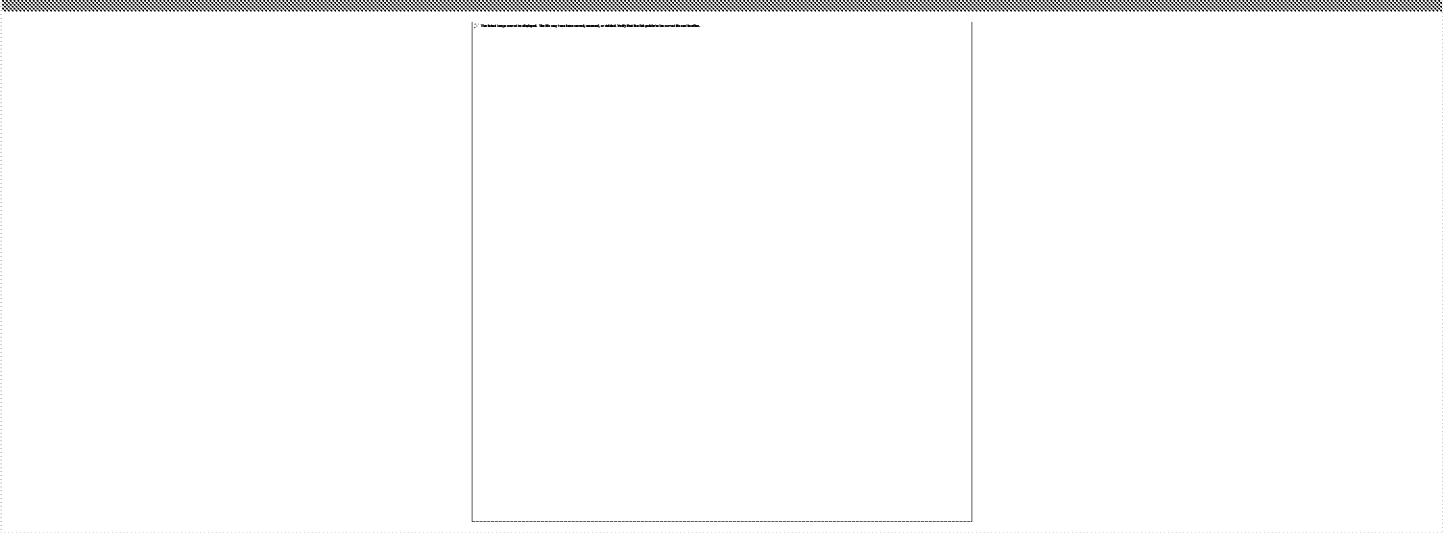
Jessica Austin

1901 Pennsylvania Ave. NW, Suite 700, Washington, DC 20006
TheFergusonGroup.com

Message

From: Water Finance & Management [news@em.waterfm.com]
Sent: 1/7/2019 7:30:20 PM
To: Grevatt, Peter [Grevatt.Peter@epa.gov]
Subject: Rate Setting: From Skepticism to Acceptance

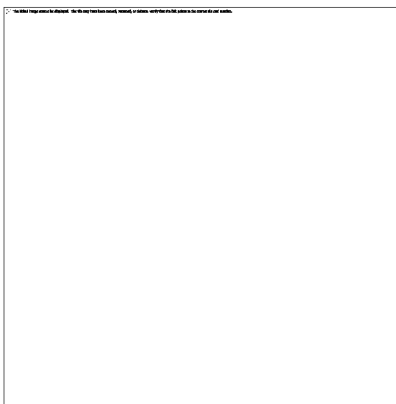
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Rate Structuring & Steering the Conversation from Skepticism to Acceptance

The ethos and expectations of the utility management, the administration, the rate-approving body and the ratepayers intersect during every utility's rate setting and approval process. Municipal utilities, municipal authorities and investor-owned utilities that head down the rate setting path all need to effectively address a myriad of interests and manage conversations among these four distinct stakeholder groups.

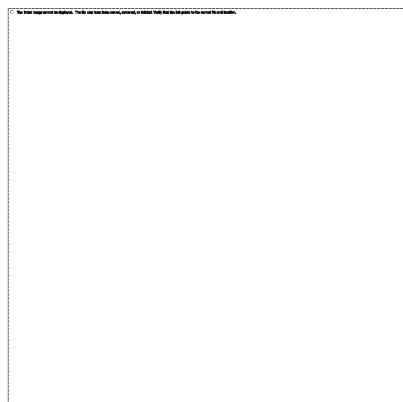
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What did the midterm election results mean for water?

This year's midterm elections had the highest turnout in a half century, with 49 percent of the population voting for candidates at the national, state and local level. In the U.S. House of Representatives, control flipped with Democrats poised to pick up nearly 40 seats.

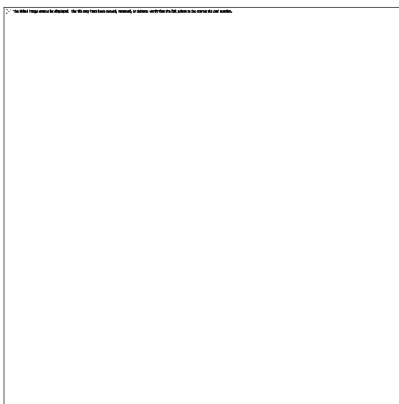
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NACWA: New bill will provide greater certainty for long-term investment

The National Association of Clean Water Agencies (NACWA) is applauding Congress for its strong bipartisan action in passing the Water Infrastructure Improvement Act. The bill, passed in December, will codify the U.S. Environmental Protection Agency's (EPA's) Integrated Planning (IP) approach into law, and provide local communities with critical new flexibilities in meeting their Clean Water Act (CWA) obligations.

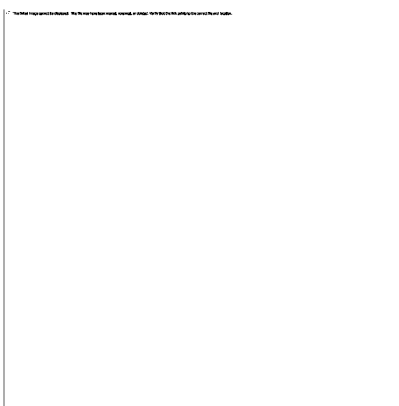
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CALL FOR SPEAKERS — 2019 Water Asset Management Conference Online

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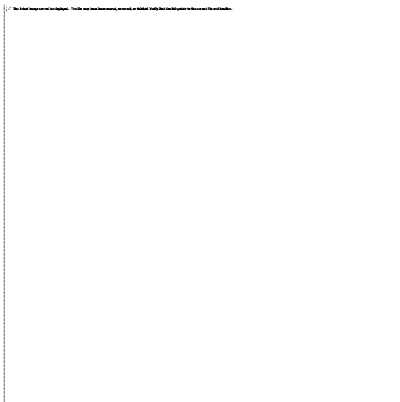
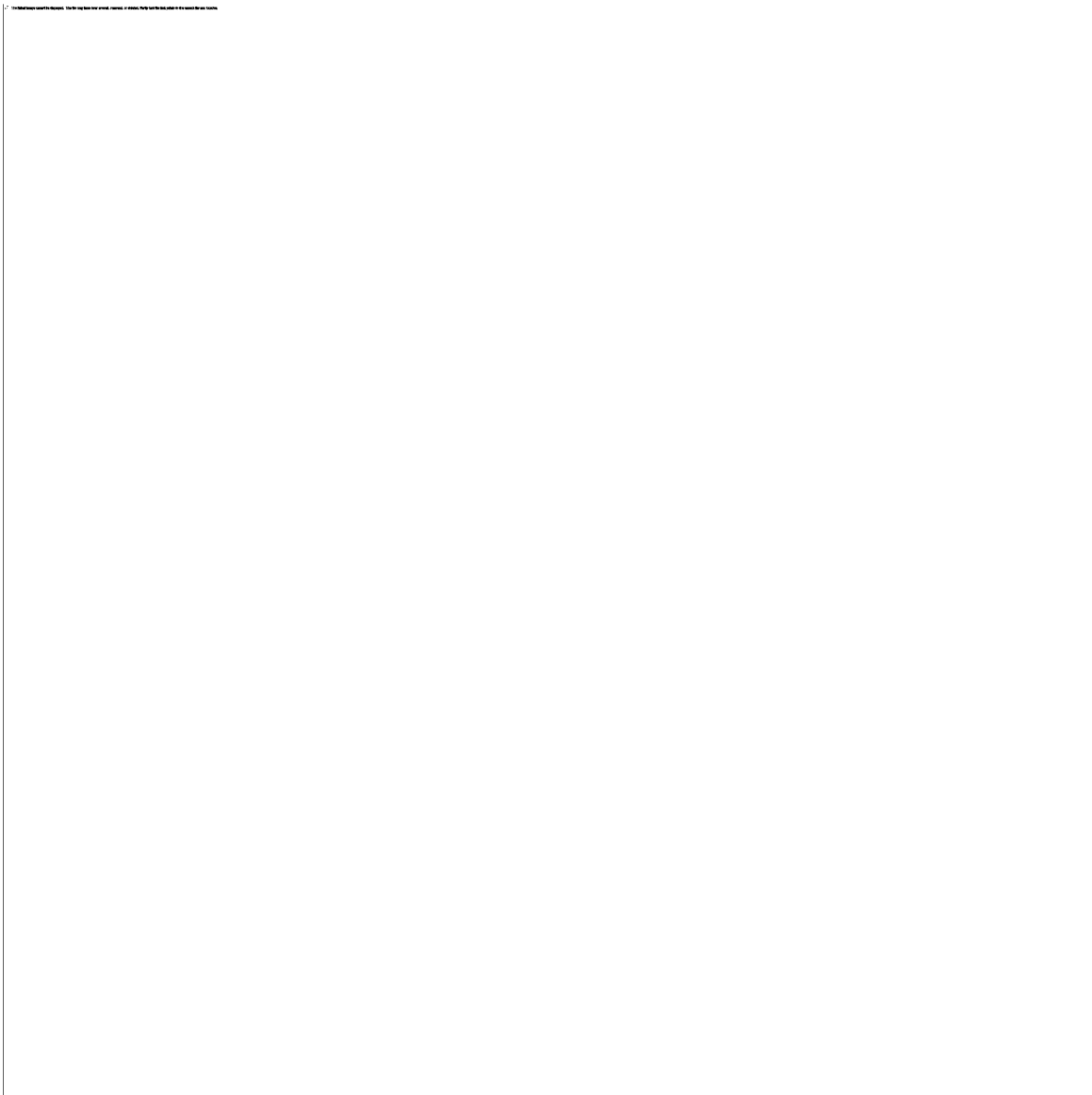
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Better Flow Monitoring, Greater Transparency

Consumers are becoming more tech-savvy and, as a result, their expectations for the data and services utilities offer are more demanding than ever. They want to see data to support the charges outlined on their water bills and expect a response to issues in real-time. At a time when transparency is valued more than ever, better transparency can be an essential asset to utilities seeking to improve relationships with their customers.

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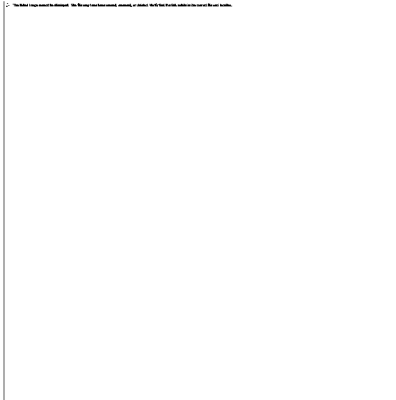


Flint awards leak detection contract to Utilis

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Start initiative, the leak detection program is helping Flint rebuild its reputation in water conservation and quality.

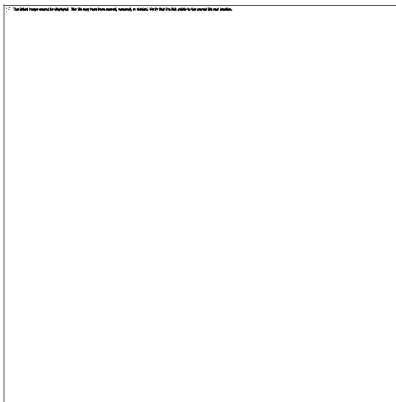
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DC Water to offer new lead service line replacement program

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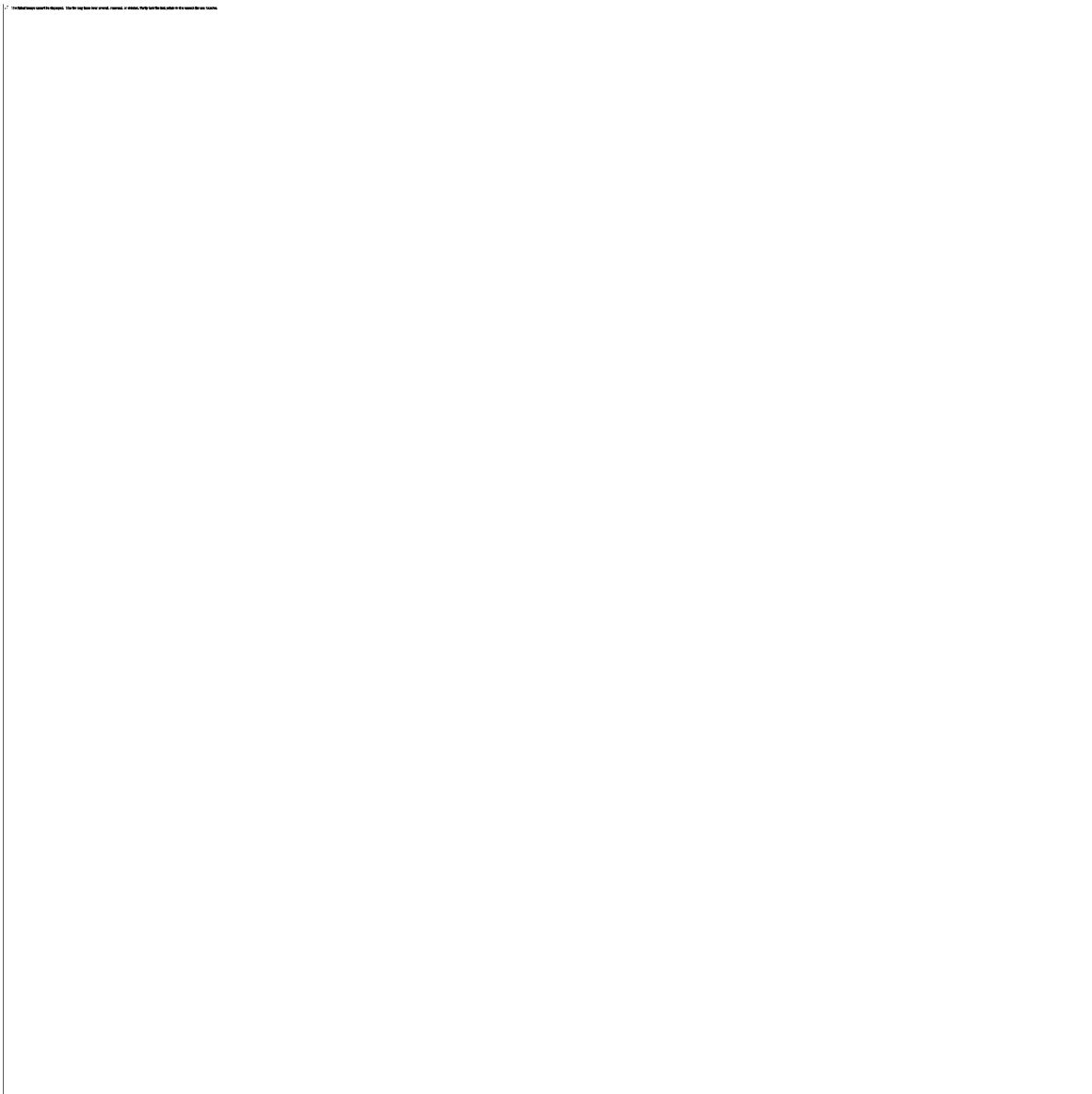
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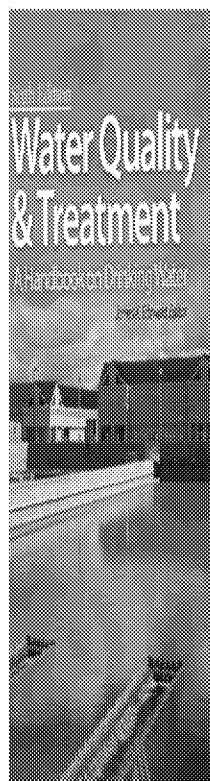


NASTT's 2019 No-Dig Show — March 17-21, 2019

Chicago, IL

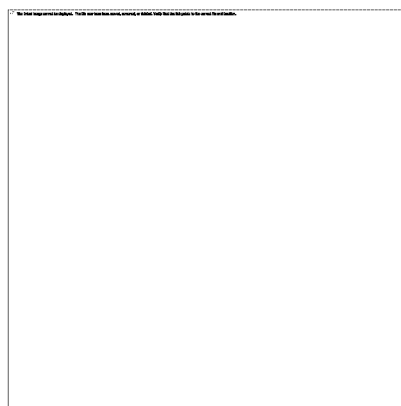
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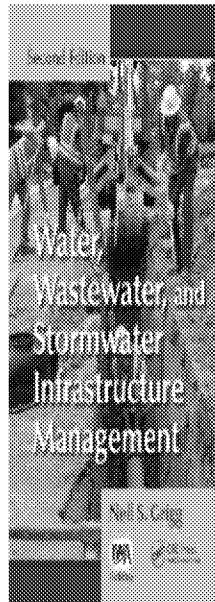


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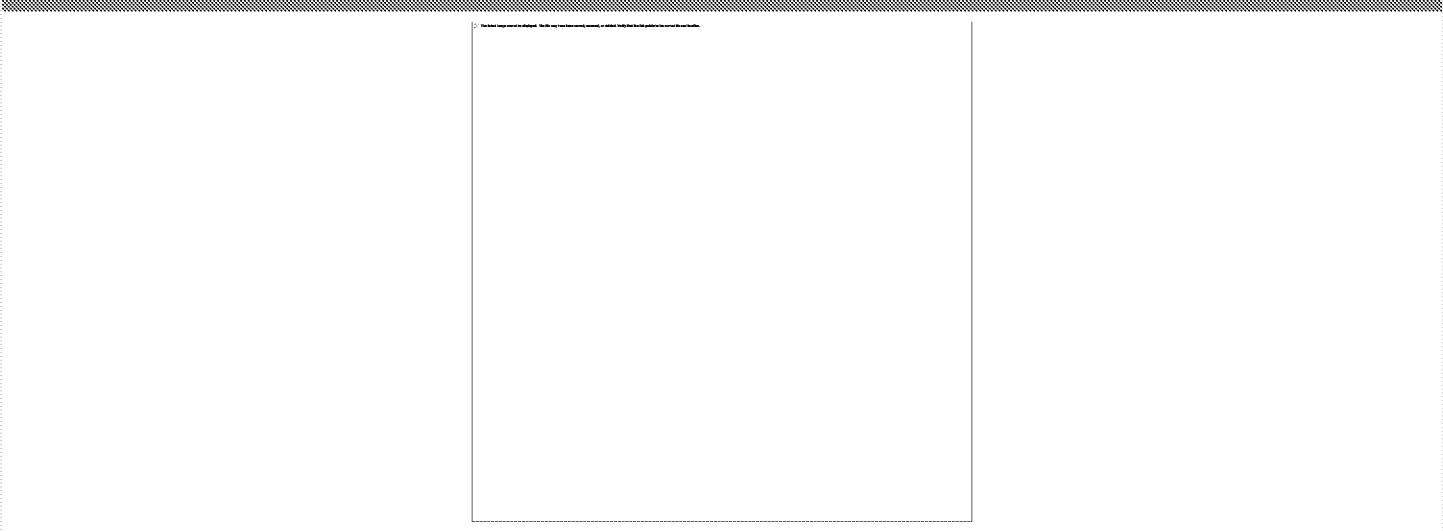
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Subject: Call for Speakers – 2019 Water Asset Management Online

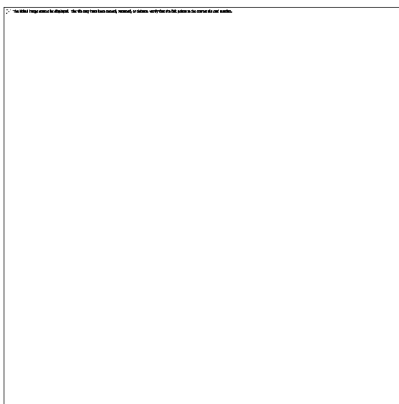
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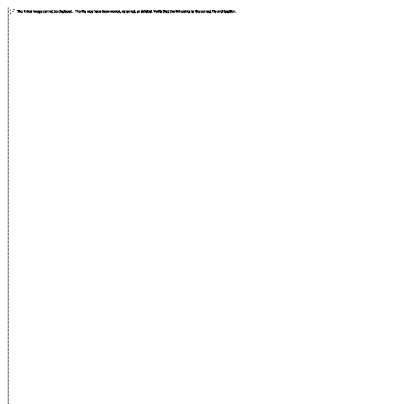
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Water sector lauds passage of Farm Bill

The U.S. water sector is praising Congress for passing a 'Farm Bill' that recognizes the importance of protecting drinking water sources from nutrient runoff. The bill will provide important policy and funding tools to better address many of the nation's water quality challenges through holistic and collaborative watershed approaches.

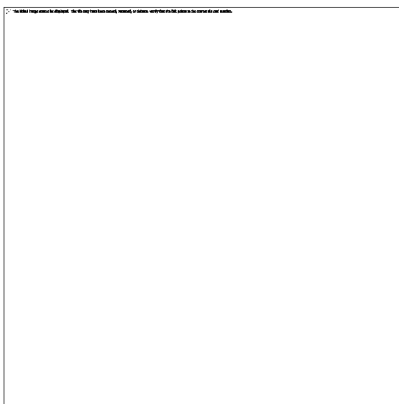
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Sensus Reach Conference puts across-the-board utility advancements on display

More than 1,200 attendees made their way to sunny Hollywood, Fla. in October as Sensus' annual Reach Conference featured a comprehensive look at smart metering, analytics, customer service and many other water utility advancements.

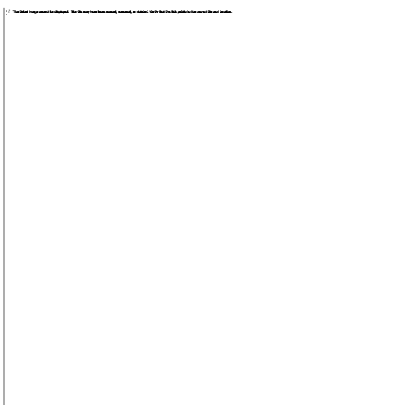
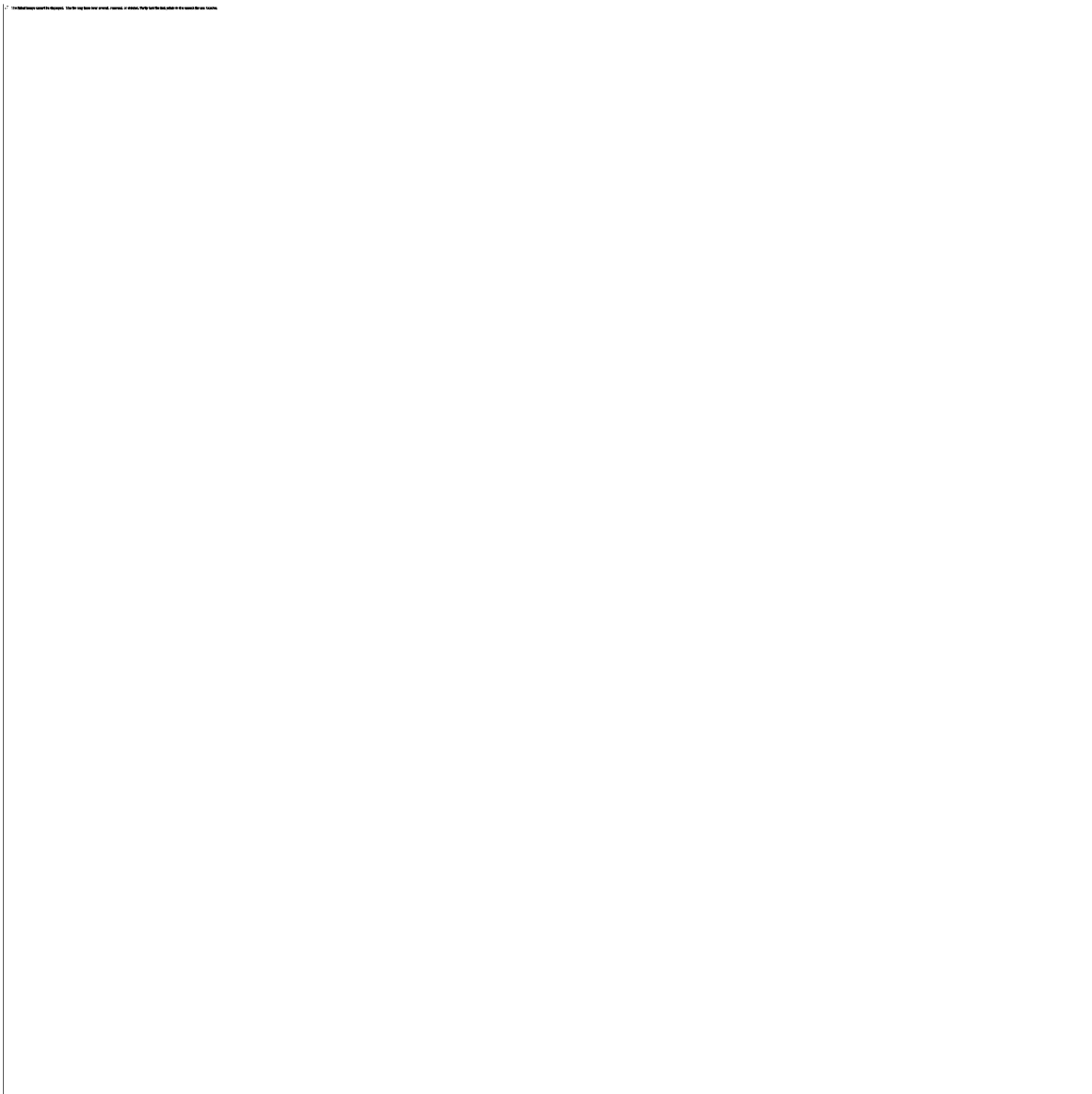
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AlexRenew CEO Karen Pallansch: *WF&M's* 2018 Award Winner

It doesn't take long to conclude that Karen Pallansch is passionate about water. What she's even more passionate about is working alongside operators, engineers, plant managers and countless others who she considers the unsung heroes of public service.

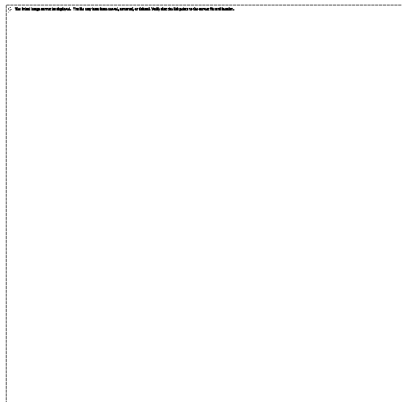
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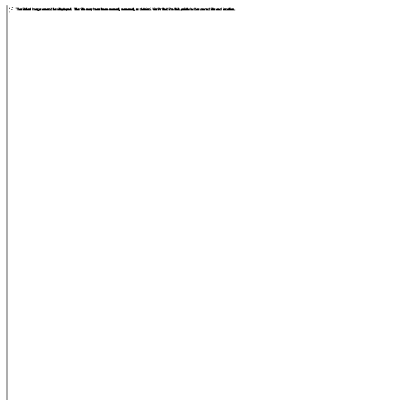
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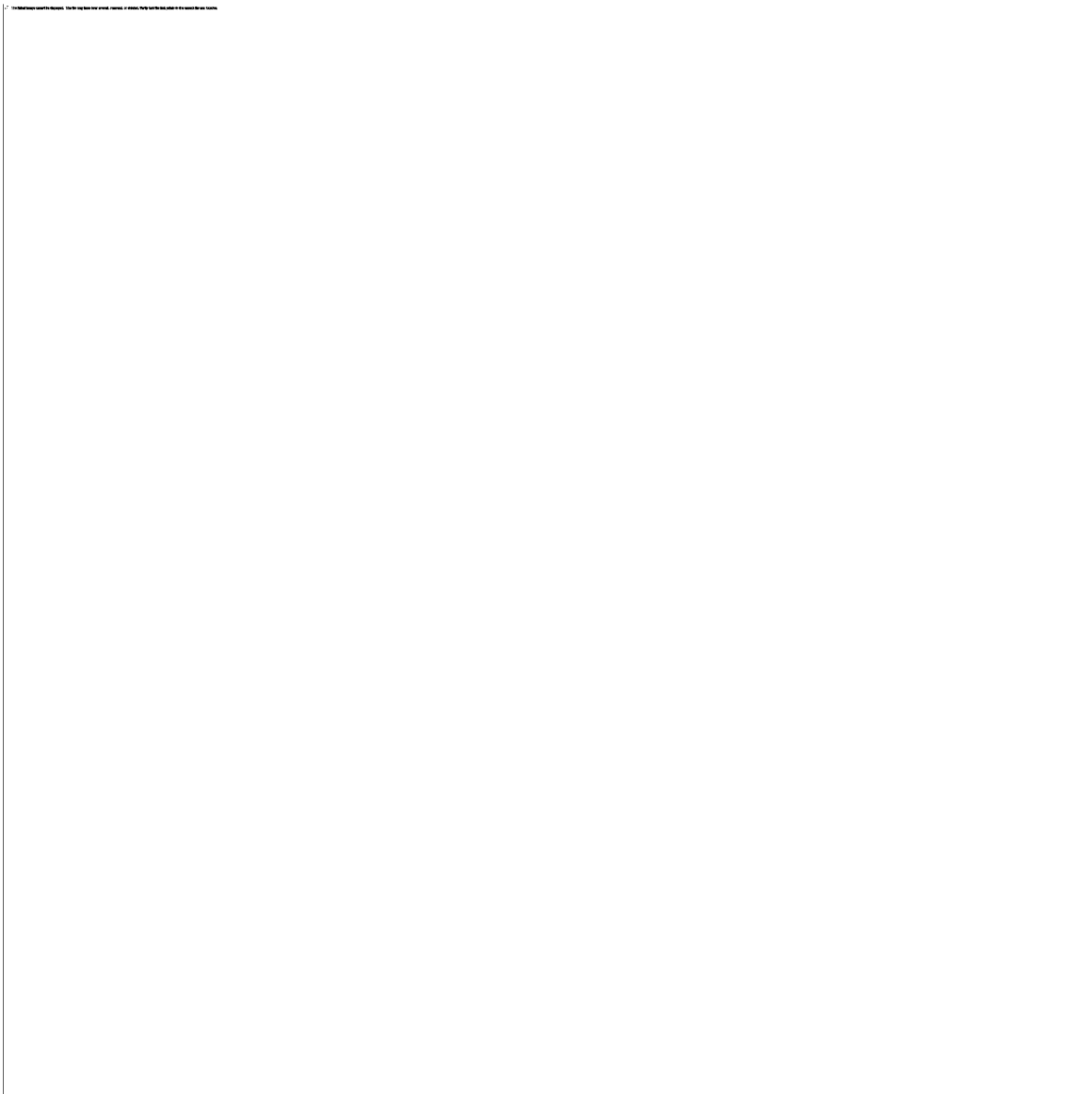
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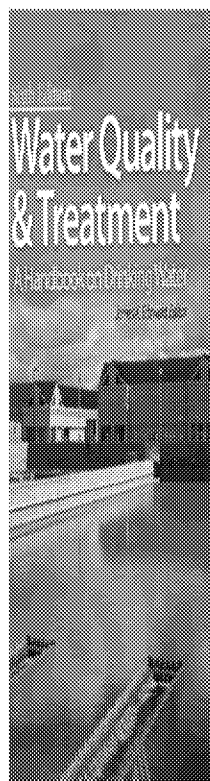


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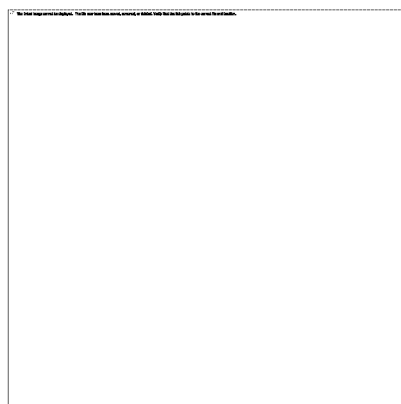
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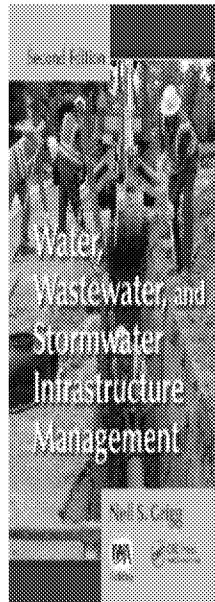


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Sent: 12/10/2018 7:28:25 PM
To: Grevatt, Peter [Grevatt.Peter@epa.gov]
Subject: WRF Announces New CEO

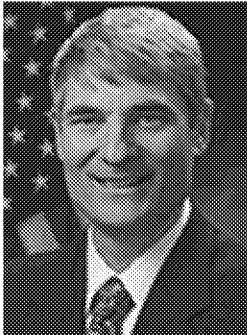
We Welcome Peter Grevatt to Our Team

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Announcement

The Water Research Foundation Names Peter Grevatt as new Chief Executive Officer



December 10, 2018 - The Water Research Foundation (WRF) has named Dr. Peter Grevatt as Chief Executive Officer, effective in February 2019.

"We are thrilled that Peter will be leading The Water Research Foundation team," said Kevin Shafer, co-Chair of the WRF Board of Directors. "Throughout his career, Peter has demonstrated strong leadership and exceptional communication skills, combined with extensive water research knowledge. He's an experienced and respected thought leader throughout the water sector and an ideal fit to lead WRF into the future."

Grevatt has over 30 years of experience leading the implementation of public health and environmental protection programs including significant national leadership experience in the water sector. Most recently, Grevatt served as Director of EPA's Office of Ground Water and Drinking Water (OGWDW). At OGWDW, he was responsible for ensuring the safety of the nation's drinking water supply through the development and implementation of national drinking water standards, oversight and funding of state drinking water programs, and the implementation of source water protection and underground injection control programs.

Prior to joining OGWDW in October 2012, Grevatt served as the Director of the Office of Children's Health Protection and as the Senior Advisor to EPA's Administrator for Children's Environmental Health. Grevatt has held leadership roles in EPA's national hazardous waste and water quality programs. Grevatt received his MS and PhD degrees in Basic Medical Sciences from New York University Medical Center and earned his bachelor's degree in Biology from Earlham College.

"I could not be more excited to join with the great professionals at The Water Research Foundation," said Grevatt. "The Foundation is perfectly positioned to collaborate across the water sector, lead innovation in integrated water resources management, and provide the highest level of service to our subscribers and the public."

Grevatt takes over as CEO during a time of unprecedented change and opportunity for The Water Research Foundation. In January 2018, the Water Environment & Reuse Foundation and the Water Research Foundation integrated to become the world's leading water research organization. The integration represented the evolution of water research issues, the overlap between water, wastewater, stormwater, and reuse, and efficiencies to be gained through a consolidated research program. The new organization serves as a model for collaboration across the water sector.

While major strides have been made in the last year, much work remains in not only consolidating WRF's research programs, subscriber services, and other programs, but tackling pressing water sector issues such as aging infrastructure, dwindling water supplies, and lead in drinking water, plus opportunities in resource recovery and technology development and testing.

Grevatt replaces Robert Renner, who will retire. Renner has led the Water Research Foundation since 2005. Under Renner's leadership, the legacy Water Research Foundation successfully transitioned from primarily a drinking water organization to focusing on the entire water sector, and then the integration with WE&RF.

"Rob's technical knowledge, communication skills, leadership and management capabilities, and ability to nurture professional relationships and trust throughout the water community have served WRF well, especially during this transition to a One Water approach," said Chuck Murray, WRF Board of Directors co-Chair. "Rob's strong commitment to improving subscriber value is obvious in the many new ways WRF now prioritizes research and communicates results. It has been a great privilege to work with Rob for these last 14 years."

The Water Research Foundation
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Subject: 'Tis the Season

New CEO, New RFPs, WRF Board Outcomes

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News



New RFPs and RFQ Posted for Potable Reuse Projects

RFPs are available for three new research projects under the Advancing Potable Reuse Initiative. A Request for Qualifications on another potable reuse project has also been posted.

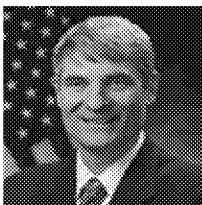
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WRF Board Meeting Outcomes

The WRF Board of Directors met last week to make important decisions regarding research and rate strategies for 2019 and into the future. > [LEARN MORE](#)



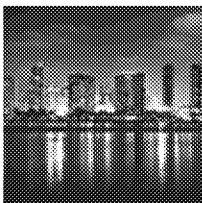
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Last Chance: LIFT SEE IT Scholarships

The LIFT Scholarship Exchange Experience for Innovation & Technology (SEE IT) Program provides approximately \$30,000 in travel scholarships for utility personnel to visit other utilities with innovations of interest. Applications are due December 14, 2018. > [LEARN MORE](#)



WateReuse Symposium Call for Abstracts

The WateReuse Association invites abstract submissions for the 34th Annual WateReuse Symposium, taking place September 8 – 11, 2019 in San Diego, California. Submissions are due by February 7, 2019. > [LEARN MORE](#)

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To: Grevatt, Peter [Grevatt.Peter@epa.gov]
Subject: 'Waters of the U.S.' Redefined; Sea Creature Inspires Water Treatment Breakthrough

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In This Issue:

- [Understanding How Predictive Analytics Tools Benefit Power Utility Asset Management](#)
- [The Data Influx: Transforming Data Overload Into Business Insights](#)
- [Avoiding The Formation Of Disinfection Byproducts In Wastewater With Peracetic Acid](#)
- [A Water Treatment Breakthrough, Inspired By A Sea Creature](#)
- [Operations And LRV Calculations At Southwest Pipeline Project Drinking Water Treatment Facility](#)
- [Ski Club Non-Invasively Pinpoints PE Pipe Water Leak](#)
- [How Cloud-Based Modeling Capabilities Can Help Boost Cities' Resilience And Infrastructure Needs In The Face Of Climate Variability](#)
- [EPA, Army Propose New WOTUS Definition](#)

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NEW PRODUCT: The ULTRAPEN™ PTBTx™

Myron L® Company announces the release of a new product line, the ULTRAPEN PTBTx, Bluetooth-enabled pocket testers for use with Apple iOS 6 and iOS 7 mobile devices. These instruments are designed to be extremely accurate, fast, and simple to use in diverse water quality applications. Advanced features include automatic temperature compensation, highly stable microprocessor-based circuitry, user-intuitive design, and waterproof housing. The PTBTx pocket testers are easy to calibrate and easy to use. [Learn more.](#)

Featured Articles

The Data Influx: Transforming Data Overload Into Business Insights

By Gary Wong, OSISOft

"We have too much data" is the refrain we continually hear from water utilities. It's no surprise that managing data from multiple sources and turning it into business insights presents a daunting challenge; however, data influx does not have to be a burden. When managed well there's no such thing as too much data, especially if your business is implementing a Big Data strategy — a topic that has implications and reach beyond the scope of this paper.

Operations And LRV Calculations At Southwest Pipeline Project Drinking Water Treatment Facility

By Toray Membrane USA

This presentation will discuss the operation of a four-MGD pressurized two-stage ultrafiltration (UF) plant over a 14-month period at the Oliver-Mercer-North Dunn (OMND) Drinking Water Treatment Facility in North Dakota.

Avoiding The Formation Of Disinfection Byproducts In Wastewater With The Use Of VigorOx WWT II Peracetic Acid

By PeroxyChem

This article discusses the benefit of using VigorOx WWT II for wastewater disinfection to address concerns or compliance issues with regards to disinfectant byproducts (DBPs) and the implications to wastewater utilities.

Understanding How Predictive Analytics Tools Benefit Power Utility Asset Management

By Schneider Electric

The impact of utility industry restructuring is being felt on several levels. The upside of distributed generation growth and the diversification of power sources is also resulting in the downside of loading issues, less switching flexibility, and the potential for reverse power flow. New predictive asset analytics tools allow utility personnel to address these issues before they become problems. This paper reviews how these tools can be applied to both utility operations and maintenance.

Ski Club Leverages Echologics To Non-Invasively Pinpoint PE Pipe Water Leak

By Mueller Water Products

Renowned as one of the top ski destinations in Ontario, the Caledon Ski Club is a private ski and snowboarding club located about an hour outside of Toronto in the heart of the Caledon Hills and offers some of the best snowmaking and grooming in the province.

Industry News



EPA And Army Propose New "Waters of the United States" Definition

Washington — The U.S. EPA and the Army are proposing a clear, understandable, and implementable definition of "waters of the United States" that clarifies federal authority under the Clean Water Act. Unlike the Obama administration's 2015 definition of "waters of the United States," today's proposal contains a straightforward definition ..

- [A Water Treatment Breakthrough, Inspired By A Sea Creature](#)
- [Is Our Nation's Water Supply Disrupting The Human Endocrine System?](#)
- [USDA Invests In Water And Wastewater Infrastructure In 46 States](#)
- [Over 90,000 Petitions Demanding Fracking Ban Delivered](#)
- [River Conservation Is 'Blind' Without High-Resolution Monitoring](#)
- [New Nitrate Monitor Lowers Costs](#)
- [The Water Research Foundation Names Peter Grevatt As New Chief Executive Officer](#)
- [Fluence To Build \\$8.4M Build-Own-Operate Plant In Peru](#)
- [After The Hurricane: Maria's Far-Reaching Effects On Puerto Rico's Watersheds And Forests](#)

Technology Showcase



Directly Actuated Solenoid Valve VZWD

Ideal for high pressures with low flow rates, the VZWD diaphragm valve operates without differential pressure at up to 90 bar, even in closed media circuits.

• [Request Information](#)
Festo Corporation



Model 4100 Liquid Vacuum Chemical Feeder

The JCS Industries Model 4100 Liquid Vacuum Chemical Feeder is for operations that require high efficiency, accuracy, control, and safety.

• [Request Information](#)
JCS Industries Inc.



Aquafine OptiVenn

The OptiVenn Series is a family of robust and flexible UV systems with advanced technology designed to meet the stringent requirements of pharmaceutical, food and beverage, microelectronics, and other industrial markets.

• [Request Information](#)
TrojanUV



Clari-DAF PW System

The Leopold Clari-DAF PW (potable water) system is a clarification technology for the pretreatment of rapid gravity filter feedwater. It is a proven, highly effective technology for removing low-density particulates as well as *Giardia* and *Cryptosporidium*.

• [Request Information](#)
Leopold – A Xylem Brand

Recommended Resources

Electrochemical Nano Diffusion (END)

Magna Imperio Systems Corporation (MIS) designs and builds the world's highest recovery and most energy efficient water desalination systems. Founded on groundbreaking electrolytic cell research conducted for the U.S. Navy, the company's electrochemical nano diffusion (END) system significantly advances the performance and efficiency of traditional electrodialysis reversal (EDR) technology.

Impeller Matrix: KSB Has The Right Design For Your Application

In addition to selecting the right impeller size, selecting the right corresponding impeller type is equally as important. Put KSB 's specialized impeller technology to work for you.

Compit Pump Stations

Whether transporting wastewater, greywater or groundwater, you can equip your Flygt Compit pump station with submersible Flygt pumps and accessories.

415 Tapping Sleeve For Concrete Steel Cylinder Pipe

The JCM 415 Tapping Sleeve for concrete steel cylinder pipes provides the features and design components to safely branch pipelines with elevated working pressures (150PSI and higher). Unmatched in the industry, the JCM 415 Tapping Sleeve meets the AWWA M-9 Manual standards and continues to be the leading sleeve design preferred by CSCP tapping contractors.

Automated Sustainable Stormwater Design

In this webinar you can learn how you can greatly reduce design time and produce more accurate and easy-to-understand sustainable stormwater plans. Join Zach Sample, P.E., to learn how XPDRAINAGE users can automate the sizing of all elements in their sustainable stormwater network.

Automation Solutions For Water Industry Challenges

Doug Johnson, director of business development for Emerson, discusses the unprecedented challenges facing water industry professionals, including new regulations, growing security concerns, and aging infrastructure, and how advanced automation solutions can provide significant benefits in each of these areas.

Featured Guest Column

How Cloud-Based Modeling Capabilities Can Help Boost Cities' Resilience And Infrastructure Needs In The Face Of Climate Variability



By Dr. Richard Crowder and Dr. Jon Wicks

Combining technologies can deliver a detailed and robust understanding of flood risk.

Product Focus

- Sewper Rx Sludge Reduction System – RELIANT Water Technologies
- Washer/Compactor – Schreiber
- Floor Washer System – Vaughan Company
- CivilStorm - Stormwater Modeling And Analysis Software – Bentley Systems
- Industrial Blower Packages – Kaeser Compressors, Inc.
- There's Money In That Sludge! – JWC Environmental
- Reactivation Services – Calgon Carbon Corporation

Connect With Water Online:



Ensure our newsletter reaches your inbox by following these [whitelist instructions](#).

If you need to update your user profile, please [visit here](#). This newsletter is being sent to grevatt.peter@epa.gov. To cancel your subscription to the newsletter, please [opt out here](#).

You may also send an e-mail to newsletter@vertmarkets.com.

Message

From: Michael Deane via
LinkedIn [messages-
noreply@linkedin.com]
Sent: 12/12/2018 9:05:44 PM
To: Grevatt, Peter
[Grevatt.Peter@epa.gov]
Subject: Michael Deane
mentioned you in a post

Peter Grevatt



You were mentioned in a post

[Check it out](#)



Michael Deane
Shared this

"Exciting news from the Water Research Foundation about the appointment of its new CEO, Dr. Peter Grevatt. Great selection! Retiring CEO Robert Renner was always going to be extremely..."

[Join the conversation](#)

[Unsubscribe](#) | [Help](#)

This email was intended for Peter Grevatt (Director, Office of Ground Water and Drinking Water at US Environmental Protection Agency (EPA)). [Learn why we included this.](#)



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Message

From: Wadlington, Christina [Wadlington.Christina@epa.gov]
Sent: 5/9/2018 11:19:24 AM
To: Grevatt, Peter [Grevatt.Peter@epa.gov]
CC: Mclain, Jennifer [Mclain.Jennifer@epa.gov]
Subject: Re: PFAS National Leadership Summit

I have a short list of people to circle back with today. I wanted to count the chairs in the room to double check since we are already at 201.

Sent from my iPhone

On May 9, 2018, at 7:18 AM, Grevatt, Peter <Grevatt.Peter@epa.gov> wrote:

Did you reach out to Claudio or should I do so? I want to make sure we close the loop today. Thanks.

From: Grevatt, Peter
Sent: Monday, May 07, 2018 3:05 PM
To: Wadlington, Christina <Wadlington.Christina@epa.gov>
Cc: Mclain, Jennifer <Mclain.Jennifer@epa.gov>
Subject: Re: PFAS National Leadership Summit

If we can fit one for WEF we should do so. Sorry I did not catch this sooner!

Sent from my iPhone

On May 7, 2018, at 2:32 PM, Wadlington, Christina <Wadlington.Christina@epa.gov> wrote:

We did not. We invited AWCA and NACWA to represent the clean water interests. We also have the Water Quality Association and the Water Research Foundation.

From: Grevatt, Peter
Sent: Monday, May 07, 2018 2:09 PM
To: Wadlington, Christina <Wadlington.Christina@epa.gov>
Cc: Mclain, Jennifer <Mclain.Jennifer@epa.gov>
Subject: Fwd: PFAS National Leadership Summit

Please advise on status. Did we not invite them?

Sent from my iPhone

Begin forwarded message:

From: Claudio Ternieden <cternieden@wef.org>
Date: May 7, 2018 at 2:04:54 PM EDT
To: "Grevatt.Peter@epa.gov" <Grevatt.Peter@epa.gov>
Subject: PFAS National Leadership Summit

Hi Peter,
I wanted to follow up on the PFAS National Leadership Summit and see whether WEF could have a seat at that meeting – we feel we should be there given our membership is engaged in this issue as you know.

I've seen the agenda as it is now and seems that we should be there. Please advise on steps we need to take and I thank you in advance for your consideration!

Best regards,
Claudio

Ps: I promise to behave! 😊

Claudio H. Ternieden
Senior Director,
Government Affairs and Strategic Partnerships
WATER ENVIRONMENT FEDERATION
601 Wythe Street
Alexandria, VA 22314



cternieden@wef.org
www.wef.org

Message

From: no-reply@mail.doubledutch.me [no-reply@mail.doubledutch.me]
on behalf of Water Research Foundation [no-reply@mail.doubledutch.me]
Sent: 5/2/2018 5:15:51 PM
To: Grevatt, Peter [Grevatt.Peter@epa.gov]
Subject: Welcome to Water Research Foundation Conference



Download the App

Get the Water Research Foundation App

Peter, the mobile app for Water Research Foundation Conference is now available. Download it and log in with grevatt.peter@epa.gov.

Your initial password is '2018Research'. If you have previously used this app, please use your existing password or reset your password.

[DOWNLOAD NOW](#)

This notification was sent to grevatt.peter@epa.gov. Don't want occasional updates from this app? [Unsubscribe](#).

powered by **doubledutch**

Message

From: Becker, William [wbecker@hazenandsawyer.com]
Sent: 12/11/2018 8:54:55 PM
To: Grevatt, Peter [Grevatt.Peter@epa.gov]
Subject: RE: WRF

Thanks Peter. **Redacted** er be of any assistance.

Best wishes,

Bill

From: Grevatt, Peter <Grevatt.Peter@epa.gov>
Sent: Tuesday, December 11, 2018 2:13 PM
To: Becker, William <wbecker@hazenandsawyer.com>
Subject: RE: WRF

External Email - think before you click

Thanks for your kind message Bill. I will very much look forward to working with you and your H&S colleagues in the new year!

From: Becker, William <wbecker@hazenandsawyer.com>
Sent: Tuesday, December 11, 2018 11:26 AM
To: Grevatt, Peter <Grevatt.Peter@epa.gov>
Subject: WRF


Hi Peter –

I just wanted to say congratulations on your retirement from EPA and on becoming the next CEO for WRF!!! I was quite concerned with the merger about the direction and integrity of the foundation after Rob steps down, but am extremely pleased to see that the board made such an excellent choice for his replacement!!!

Congratulations again and best wishes in your new role!

Bill

William C. Becker, PhD, PE, BCEE

Vice President | Hazen and Sawyer
Corporate Drinking Water Practice Leader
143 Union Boulevard, Suite 220, Lakewood, CO 80228

wbecker@hazenandsawyer.com | hazenandsawyer.com

Adjunct Professor
Earth and Environmental Engineering
Columbia University
Mudd 918
500 West 120 Street
New York, NY 10027

Message

From: Peter Colohan - NOAA Federal [peter.colohan@noaa.gov]
Sent: 5/2/2018 2:48:49 PM
To: Weiss, T. Barton [WeissT@hillsboroughcounty.org]
CC: Rob Renner [rrenner@waterrf.org]; Julie Minton [jminton@waterrf.org]; Grevatt, Peter [Grevatt.Peter@epa.gov]; elglover@AtlantaGa.Gov [elglover@atlantaga.gov]; Denise.Funk@gwinnettcounty.com; Impellitteri, Christopher [Impellitteri.Christopher@epa.gov]; PinarBalci [PBalci@dep.nyc.gov]; Wadlington, Christina [Wadlington.Christina@epa.gov]; Courtney Tharpe [CTharpe@waterrf.org]
Subject: Re: WRF Research Conference in Atlanta - Dinner invitation on Sunday 5/6

Hi Julie, I will also arrive in time for the reception and dinner. All the best, Peter

On Tue, May 1, 2018 at 5:23 PM, Weiss, T. Barton <WeissT@hillsboroughcounty.org> wrote:

Julie,

I'll be there for the reception and dinner, as well.

Thank you, to you and Courtney for setting these events up!

Bart Weiss

Division Director

Reclaimed Water and Discharge Elimination Division

Public Utilities Department

email: weisst@hillsboroughcounty.org

Hillsborough County Public Utilities

925 East Twiggs St., Tampa, FL 33602

From: Rob Renner [mailto:rrenner@waterrf.org]

Sent: Tuesday, May 01, 2018 5:14 PM

To: Julie Minton <jminton@waterrf.org>

Cc: Peter Colohan - NOAA Federal <peter.colohan@noaa.gov>; Weiss, T. Barton <WeissT@HillsboroughCounty.ORG>; grevatt.peter@epa.gov; elglover@AtlantaGa.Gov; Denise.Funk@gwinnettcounty.com;

Impellitteri.Christopher@epamail.epa.gov; PinarBalci <PBalci@dep.nyc.gov>; Wadlington, Christina <Wadlington.Christina@epa.gov>; Courtney Tharpe <CTharpe@waterrf.org>

Subject: Re: WRF Research Conference in Atlanta - Dinner invitation on Sunday 5/6

[External]

Thanks Julie

Count me in

Rob

Robert C. Renner PE BCEE | CEO



The Water Research Foundation

6666 W Quincy Ave., Denver CO 80235

www.WaterRF.org

On May 1, 2018, at 1:59 PM, Julie Minton <jminton@waterrf.org> wrote:

Dear WRF Research Conference Keynote Speakers and Planning Committee:

It's hard to believe that the WRF Research Conference is almost here! We look forward to seeing everyone this weekend/next week in Atlanta!

We would like to invite you to dinner on Sunday 5/6 following the Welcome Reception, which takes place 5:00-6:30pm in the Grant Loft of the Westin Peachtree. **Would you please let me know by Thursday 5/3 if you are able to join us at ~6:45pm at a local restaurant (TBD location)?**

Also, Peter, Peter, Bart, and Rob – here is a reminder on the Monday morning lineup. Please grab your registration folder on Sunday night or Monday morning and meet in the Savannah Ballroom (10th floor) by 8:15am.

Opening Session - Monday May 7th 8:30 - 10am

8:30am Welcome/introductions – Rob Renner, CEO WRF

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9:20/25am - 5-10 min Q&A

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9:50/55am - 5-10 min Q&A

Thank you all for your contribution to making this conference a great event! Please let me know if you have any questions, and I look forward to hearing from you on dinner. My cell phone is below if you need me in Atlanta.

Best regards,

Julie

Julie Minton | Director of Strategic Initiatives

P 571.699.0023 | M 301.922.7860

The Water Research Foundation

1199 N. Fairfax St., Suite 900, Alexandria, VA 22314

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Peter Colohan, NOAA
Director, Service Innovation and Partnership Division
Office of Water Prediction, National Weather Service
National Oceanic and Atmospheric Administration
202-740-8304 (mobile)
301-427-9845 (desk)
Peter.Colohan@noaa.gov

Message

From: Weiss, T. Barton [WeissT@HillsboroughCounty.ORG]
Sent: 5/1/2018 9:23:18 PM
To: Rob Renner [rrenner@waterrf.org]; Julie Minton [jminton@waterrf.org]
CC: Peter Colohan - NOAA Federal [peter.colohan@noaa.gov]; Grevatt, Peter [Grevatt.Peter@epa.gov]; elglover@AtlantaGa.Gov; Denise.Funk@gwinnettcounty.com; Impellitteri, Christopher [Impellitteri.Christopher@epa.gov]; PinarBalci [PBalci@dep.nyc.gov]; Wadlington, Christina [Wadlington.Christina@epa.gov]; Courtney Tharpe [CTharpe@waterrf.org]
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Bart Weiss
Division Director
Reclaimed Water and Discharge Elimination Division
Public Utilities Department



email: weisst@hillsboroughcounty.org

Hillsborough County Public Utilities
925 East Twiggs St., Tampa, FL 33602

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Best regards,

Julie

Julie Minton | Director of Strategic Initiatives

The Water Research Foundation

1199 N. Fairfax St., Suite 900, Alexandria, VA 22314

www.werf.org

This email is from an **EXTERNAL** source and did not originate from a Hillsborough County email address. Use caution when clicking on links and attachments from outside sources.

Message

From: Wadlington, Christina [Wadlington.Christina@epa.gov]
Sent: 5/7/2018 6:32:56 PM
To: Grevatt, Peter [Grevatt.Peter@epa.gov]
CC: Mclain, Jennifer [Mclain.Jennifer@epa.gov]
Subject: RE: PFAS National Leadership Summit

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Cc: Mclain, Jennifer <Mclain.Jennifer@epa.gov>
Subject: Fwd: PFAS National Leadership Summit

Please advise on status. Did we not invite them?

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To: "Grevatt.Peter@epa.gov" <Grevatt.Peter@epa.gov>
Subject: PFAS National Leadership Summit

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Best regards,
Claudio

Ps: I promise to behave! 😊

Claudio H. Ternieden
Senior Director,
Government Affairs and Strategic Partnerships
WATER ENVIRONMENT FEDERATION
601 Wythe Street
Alexandria, VA 22314


cternieden@wef.org
www.wef.org

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From: Rob Renner [rrenner@waterrf.org]
Sent: 5/1/2018 9:13:55 PM
To: Julie Minton [jminton@waterrf.org]
CC: Peter Colohan - NOAA Federal [peter.colohan@noaa.gov]; Bart Weiss [weisst@hillsboroughcounty.org]; Grevatt, Peter [Grevatt.Peter@epa.gov]; elglover@AtlantaGa.Gov; Denise.Funk@gwinnettcounty.com; Impellitteri, Christopher [Impellitteri.Christopher@epa.gov]; PinarBalci [PBalci@dep.nyc.gov]; Wadlington, Christina [Wadlington.Christina@epa.gov]; Courtney Tharpe [CTharpe@waterrf.org]
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Robert C. Renner PE BCEE | CEO


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Best regards,

Julie

Julie Minton | Director of Strategic Initiatives
[REDACTED]

The Water Research Foundation

1199 N. Fairfax St., Suite 900, Alexandria, VA 22314

www.werf.org

Appointment

From: Edwards, Crystal [Edwards.Crystal@epa.gov]
Sent: 6/19/2018 5:44:05 PM
To: Mayer, Lauren [mayer.lauren@epa.gov]; Forsgren, Lee [Forsgren.Lee@epa.gov]; Lape, Jeff [lape.jeff@epa.gov]; jaustin@tfgnet.com; Goodin, John [Goodin.John@epa.gov]; Sawyers, Andrew [Sawyers.Andrew@epa.gov]; Grevatt, Peter [Grevatt.Peter@epa.gov]; Nagle, Deborah [Nagle.Deborah@epa.gov]; Penman, Crystal [Penman.Crystal@epa.gov]
Subject: FW: Meeting with Water Research Foundation
Attachments: Real ID Information.pdf; Water Resources Congressional Summit TPv2.docx; MEETING REQUEST - WRF - EPA - Ross, Forsgren - 03-2018.doc
Location: 1201 Constitution Ave NW, Washington DC 20460 WJCE 3233 Please call 202-564-5700 for escort
Start: 6/19/2018 6:00:00 PM
End: 6/19/2018 6:30:00 PM
Show Time As: Tentative

The group from the Water Research Foundation has arrived and David Ross has agreed to start a little early, I am getting the folks now and taking them to 3233 WJC East

-----Original Appointment-----

From: Penman, Crystal **On Behalf Of** Ross, David P
Sent: Monday, January 29, 2018 2:55 PM
To: Ross, David P; Mayer, Lauren; Forsgren, Lee; Lape, Jeff; jaustin@tfgnet.com; Goodin, John; Sawyers, Andrew; Grevatt, Peter; Nagle, Deborah
Cc: Penman, Crystal
Subject: Meeting with Water Research Foundation
When: Tuesday, June 19, 2018 2:00 PM-2:30 PM (UTC-05:00) Eastern Time (US & Canada).
Where: 1201 Constitution Ave NW, Washington DC 20460 WJCE 3233 Please call 202-564-5700 for escort

Attendees

Jessica Austin – Ferguson Group
John Albert – Water Research Foundation

Jessica Austin

1901 Pennsylvania Ave. NW, Suite 700, Washington, DC 20006
TheFergusonGroup.com

Message

What you need to know to start your day.

From: Bloomberg Environment
- Environment & Energy
Report
[bloomberg@bna.com]
Sent: 12/11/2018 12:48:13 PM
To: Grevatt, Peter
[Grevatt.Peter@epa.gov]
Subject: First Move: Dusty
Baker's New Power
Concern • WOTUS
Update Rolled Out •
Recycling Potato-Chip
Bags

Bloomberg
Environment

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Dusty Baker's New Power Concern • WOTUS Update Rolled Out • Recycling Potato-Chip Bags



By [Chuck McCutcheon](#)

As a player and manager with many baseball teams, including the Washington Nationals, Dusty Baker was always concerned with having enough power.

These days, though, his focus is on solar power.

His Baker Energy Team, a startup based outside Sacramento, Calif., is developing, pitching, and working on large projects for historically black universities, cannabis-growing operations, tribal reservations, and commercial

businesses. He's drawn on his network of contacts from decades in the big-league spotlight.



Then-Washington Nationals manager Dusty Baker in May 2017.
Photographer: Greg Fiume/Getty Images

"I figured if they don't want me on their team, I'll create my own," says Baker, who left the Nationals in 2017 after they chose not to extend his contract. "I can put a team together. That's why I named it the Baker Energy Team."

Bloomberg News' Brian Eckhouse has more in a story out today. [Follow Brian](#) on Twitter.

NEW WOTUS: The Trump administration is scheduled to unveil for the first time its rewrite of rules about which water bodies fall under federal regulatory authority and which don't.

The Obama administration tried to do this with its Waters of the United States rule, or WOTUS, but that has been tied up in the courts for years. The agriculture industry and many other business groups have worried it could force businesses to obtain federal pollution permits for creeks and streams that were previously unregulated.

The Trump administration hopes to create its own version that is narrower than the Obama administration's version, but that can also survive in court.

Mark Ryan, a former EPA clean water attorney who is now a principal at the Washington state-based firm Ryan & Kuehler, [has said](#) the new rule is likely to omit all streams that flow intermittently from federal protection as well as nearly all wetlands.

David Schultz is covering; [follow him](#) on Twitter.

OTHER STORIES WE'RE COVERING

- Interest is picking up during the second week of U.N. climate summit in Katowice, Poland. Security lines were nonexistent last week but yesterday

were hundreds of people long. The State Department today is expected to send a representative to speak on a panel about Earth Day and citizen science contributing to the success of the Paris Agreement. Bobby Magill ([@bobbymagill](#)) is following.

- The House Energy and Commerce Committee’s environment panel [discusses a draft](#) of the 21st Century Transportation Fuels Act, a proposed measure to redo federal transportation fuel policies. Bloomberg News is covering.
- The House votes as early as today on two energy-related bills under a procedure reserved for noncontroversial legislation. One is a nonbinding resolution in opposition to Russia’s Nord Stream 2 natural gas pipeline in response to Russia’s recent aggression in the Sea of Azov against Ukraine. Ukraine’s government [has said](#) the pipeline that will double the amount of natural gas flowing directly to Germany from Russia increases the possibility of war breaking out. The other bill would make a more potent form of nuclear fuel—high-assay low-enriched uranium, which isn’t allowed to be used commercially—available for new nuclear reactor technology. Rebecca Kern ([@rebeccamkern](#)) is covering.
- The Trump administration plans to hold an oil and gas lease auction of 150,000 acres of public land near national parks and monuments. Environmentalists oppose the auction. Tripp Baltz ([@trippbaltz](#)) is monitoring.

QUOTE OF THE DAY

“These results appear to leave the EPA with only one choice and that is to shut the plant.”

—Illinois Democratic Rep. Dan Lipinski, [reacting](#) to tests of ethylene oxide emissions around a facility near Chicago that sterilizes medical equipment.

ALL ABOUT: RECYCLING OLD POTATO-CHIP BAGS

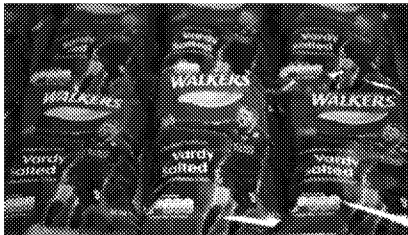
Walkers is to the U.K. what Lay’s is to the U.S.—the biggest brand of potato chips, or “crisps” as they’re known on the other side of the Atlantic.

But discarded Walkers’ bags increasingly are turning up as trash, spurring social activist group [38degrees.org.uk](#) to launch an online campaign to get the company—owned by PepsiCo Inc.—to clean up its act. The group collected

more than 330,000 signatures for the #PacketInWalkers effort, arguing that some bags have been found intact 33 years after the snacks were eaten.

The result: Walkers yesterday rolled out what it called the country's first crisp-packet recycling plan.

Old packages will be sent to recycler TerraCycle, where they'll be cleaned and shredded before getting converted into small plastic pellets that will be used to make outdoor furniture, watering cans, and other everyday items.



Limited-edition packets of Walkers crisps bearing the likeness of soccer star Jamie Vardy are seen prior to a December 2015 match in Leicester, U.K.
Photographer: Laurence Griffiths/Getty Images

The move pleased 38degrees.org.uk, but the group indicated it wants the company to do more.

"The public will be watching to make sure that the recycling scheme is not a PR stunt and that Walkers commit to ditching single-use plastic altogether," it said.

Government officials, meanwhile, encouraged more businesses to chip in.

"I want to see other companies step up, follow suit, and reduce their environmental impact," said Michael Gove, the secretary of state for environment, food, and rural affairs. —*Ali Qassim*

AROUND THE WEB

- Harvard University has been carefully tending to the thousands of acres of California vineyards it owns.
- The Natural Resources Defense Council sent a letter to the EPA notifying it of plans to sue the agency for failing to finalize its proposed rule to ban the use of methylene chloride and NMP in paint strippers.
- Peter Grevatt, formerly the EPA's top drinking water regulator, is becoming the Water Research Foundation's CEO.

TODAY'S EVENTS

- **All Day • Energy Storage** • Greentech Media holds Energy Storage Summit 2018 in San Francisco.
- **8 a.m. • Electric Vehicles** • Copper Development Association sponsors industry forum on electric vehicles.
- **9 a.m. • Latin America** • Institute of the Americas holds forum on what the new U.S. Congress means for Latin America and energy.
- **10 a.m. • China** • U.S. Energy Association holds briefing on China's rise as a major force in emerging energy and resource markets.
- **10 a.m. • Energy Efficiency** • Alliance to Save Energy hosts briefing on opportunities for utilities and energy service companies to collaborate to advance building and campus-scale systems-efficiency programs.
- **6 p.m. • Biofuels/RFS** • American Association for the Advancement of Science holds discussion on biofuels and the renewable fuel standard.

For all of today's Bloomberg Environment headlines, visit Environment & Energy Report

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Message

From: Heather Gary [heatherlgary@yahoo.com]
Sent: 12/11/2018 12:29:12 PM
To: Grevatt, Peter [Grevatt.Peter@epa.gov]
Subject: Re: Fwd: Inside EPA: Grevatt to head Water Research Foundation

Wow. Great! ☀️

On Dec 11, 2018 7:22 AM, "Grevatt, Peter" <Grevatt.Peter@epa.gov> wrote:
Press does not get any better!

Sent from my iPhone

Begin forwarded

Grevatt to head Water Research Foundation

December 10, 2018

EPA's departing drinking water chief Peter Grevatt will begin work in February as the chief executive officer of the Water Research Foundation (WRF), an organization that conducts research on all aspects of the water sector, including drinking water, wastewater, stormwater and water reuse.

American Water Works Association (AWWA) President David Rager and CEO David LaFrance praised Grevatt's experience in a [Dec. 10 letter](#) to him in his new role.

"Through our many face-to-face and written interactions, you have always demonstrated a strong commitment to science-based water policy that protects public health," the letter says. "Your willingness to listen attentively to the unique perspectives of many stakeholders -- public health professionals, researchers, environmental advocates, water utility engineers -- is an extraordinary example of strong leadership and a benefit to all who value safe, affordable water. Your experience at EPA will be invaluable to WRF as it produces ground-breaking water research in the years ahead."

AWWA established WRF in 1966, with a focus on drinking water research. In January 2018, WRF merged with the Water Environment & Reuse Foundation, following WRF's expanded focus over the past two decades to include projects on wastewater, reuse, desalination, and stormwater.

Grevatt last month [announced his retirement](#) from EPA after 30 years of service, telling *Inside EPA* that he was "proud of the great work that I have been able to participate in throughout my federal service," and saying that he planned to continue his career protecting human health and the environment.

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EPA officials said Dec. 6 during the annual meeting of the agency's National Drinking Water Advisory Council that Jennifer McLain, OGWDW's deputy director, will serve as the office's acting director following Grevatt's retirement. McLain's career

at EPA has included stints in both the drinking water office and the Office of Chemical Safety and Pollution Prevention, dealing with pesticides.

Message

From: Beate Wright [bwright@waterrf.org]
Sent: 6/13/2018 12:48:54 AM
To: Grevatt, Peter [Grevatt.Peter@epa.gov]
Subject: Re: Connect?

My cell is 202-570-5320. Happy to connect! I'm at EMA Reception now at shark reef in Mandalay Bay

Beate M. Wright, PE

Sent from my iPhone

On Jun 12, 2018, at 4:26 PM, Grevatt, Peter <Grevatt.Peter@epa.gov> wrote:

I only put your email in my contacts and I have replaced work phones since we last exchanged texts. Can you either text me at 2027130825 or email me your cell number if you want to coordinate this evening? Alternatively, we can just connect and in the AM. Thx.

Sent from my iPhone

On Jun 11, 2018, at 5:56 PM, Beate Wright <bwright@waterrf.org> wrote:

Hi Peter. I'd love to connect. I will be at breakfast. If schedules don't work out while at ACE- I'd love to connect sometime after ACE.

Beate M. Wright, PE

Sent from my iPhone

On Jun 11, 2018, at 5:32 PM, Grevatt, Peter <Grevatt.Peter@epa.gov> wrote:

I'll be at the WRF breakfast in the morning. Please have a pretty full schedule tomorrow, but please let me know if you'd like to connect.

Sent from my iPhone

Mainstreaming Potable Water Reuse in the United States:

Strategies for Leveling
the Playing Field

Presented by:

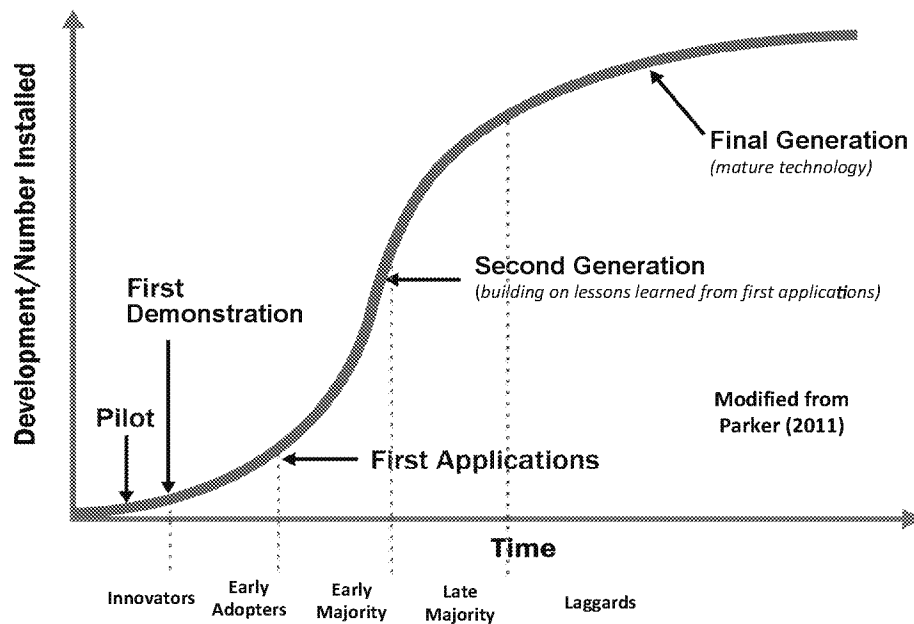
David Sedlak, UC Berkeley
Peter Grevatt, USEPA
Ted Henifin, HRSD



Water Research Foundation May 8, 2018

Welcome and thanks for attending. Goals: (1) inform about a unique and important workshop; (2) engage in a discussion about recommendations; (3) ID a path forward. The overall premise of the meeting was related to the question of whether or not something is holding back potable water reuse and what we as a community can do about it.

Technology Diffusion “S-Curve”



One way to think about potable reuse is as a new technology. It always takes time for technologies to diffuse because there are considerable barriers and risks to early adopters. As price comes down and regs harmonize it gets easier. The rate at which this occurs depends upon the nature of the technology.

Surface Water Storage

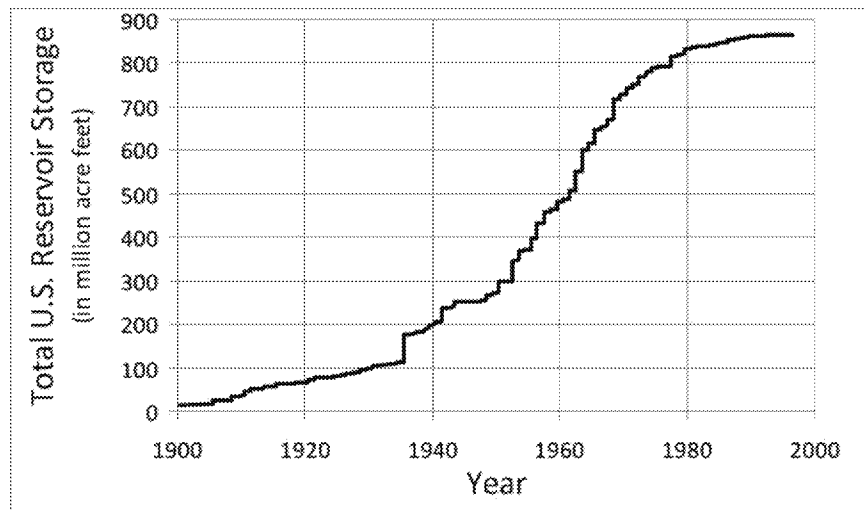
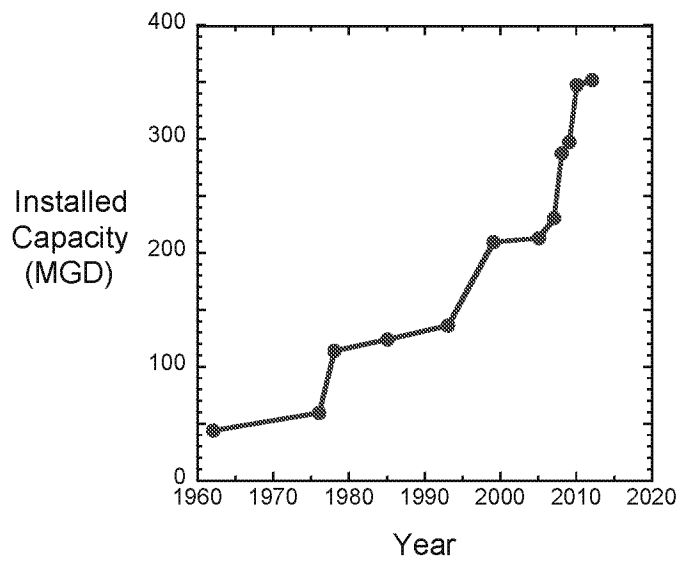


FIGURE 1-1 Reservoir capacity in the continental United States from 1900 to 1996.
SOURCE: Data from Graf (1999).

NRC (2012)

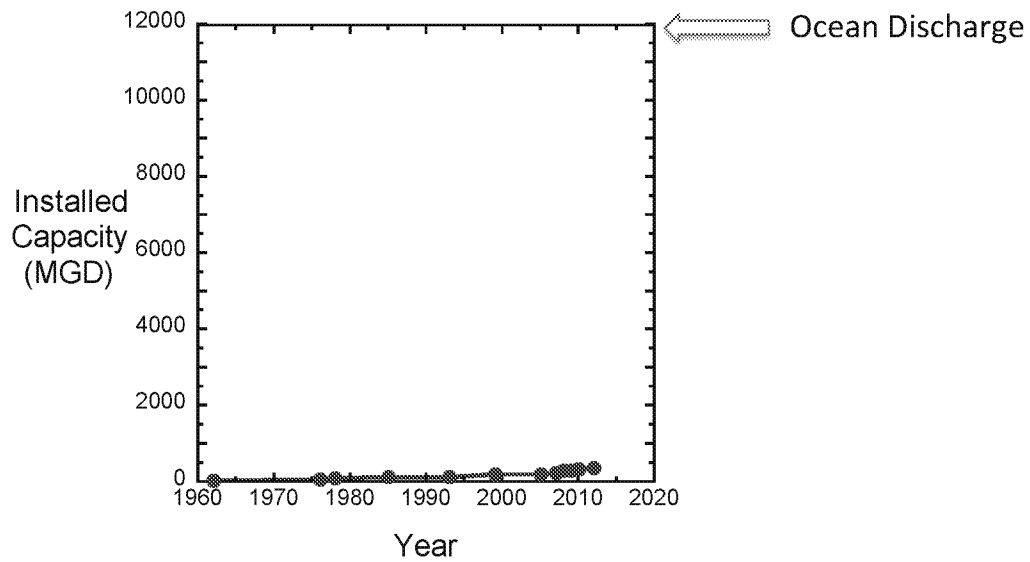
Consider this figure from the 2012 National Academies report on reuse. US reservoir expansion over a 40 year period. Technologies did improve, but it was probably the funding and government support that led to the great growth.

Surface Water Storage



If we plot the installed capacity of potable reuse projects in the US we might be able to convince ourselves that we are in the midst of a similar trend.

Surface Water Storage



But all of that changes when you consider the amount of available wastewater in the country (less than 5% of available capacity). The NRC 2012 report concluded that reuse has great potential to meet the nation's water needs and most people here think that potable is probably the way to go in many situations.

Is the Playing Field Level?

Slow rate of investment in potable water reuse may be attributable to limited needs for new water supplies

The slow rate of investment may be explained by the fact that it is only the rapidly growing cities in water stressed areas that need new supplies.

Is the Playing Field Level?

Slow rate of investment in potable water reuse may be attributable to limited needs for new water supplies

But...

Large capital investments are still being made in other supply options (e.g., storage, conservation and desalination)

But we still see capital improvement plans that select other sources instead of reuse.

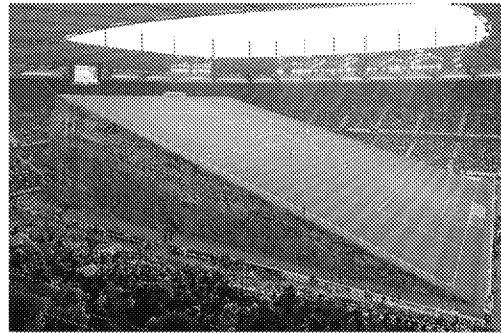
Is the Playing Field Level?

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But...

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Goal: Level the playing field



Mainstreaming Potable Water Reuse in the United States:
Strategies for Leveling the Playing Field

3

The purpose of our work shop was to identify those barriers and ways of leveling the playing field.

Workshop (October 25-27, 2017)



- Focus on institutional issues (no process flow diagrams!)
- Chatham House Rule (no attribution!)
- Professional facilitation (no need to write!)
- Diverse participants

With facilitation, logistical, and writing support from:



Meridian Institute
Connecting People to Solve Problems



Workshop Participants

Organizing Committee

- **Dave Smith**, USEPA Region 9
- **David Sedlak**, ReNUWit/UC Berkeley
- **Roger Dower**, The Johnson Foundation at Wingspread
- **Ed Archuleta**, University of Texas El Paso
- **Jeff Mosher**, WE&RF



Participants

- **Newsha Ajami**, Stanford University
- **Rich Atwater**, MWD
- **Laura Belanger**, Western Resource Advocates
- **Marlo Berg**, TCEQ
- **Jeff Bigg**, Tucson Water
- **Sean Bothwell**, California Coastkeeper
- **Marshall Brown**, Aurora Water
- **Jason Dadakis**, OCWD
- **Glen Daigger**, University of Michigan
- **Ralph Exton**, Suez Water Technologies
- **Denise Fort**, University of New Mexico
- **Daniel Gerritty**, UNLV
- **Peter Grevatt**, USEPA
- **Ted Henifin**, HRSD
- **Amber Kim**, WaterReuse Association
- **Jeff Lape**, USEPA
- **Justin Mattingly**, WRF
- **Ellen McDonald**, Alan Plummer Associates
- **Christina Montoya**, El Paso Water
- **Daniel Nix**, City of Wichita Falls
- **Christine Owen**, Hazen and Sawyer
- **Darrin Polhemus**, CA WRCB
- **Patricia Tennyson**, Katz & Associates

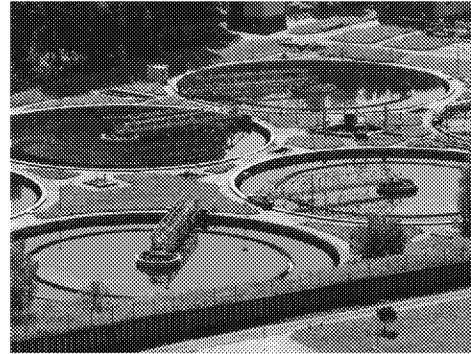
Facilitators:

- **Molly Mayo**, Meridian Institute
- **Kelsey Semrod**, Paradigm Environmental
- **Brad Spangler**, Meridian Institute

As I indicated, the participants were carefully selected and included folks from utilities, regulatory arena, NGOs and academia. Also had national representation, skewed toward states with more experience in reuse (Texas and CA).

Challenges: Real and Perceived

- **Public Acceptance**
 - failed projects from 1990s
 - lack of familiarity outside of regions with existing projects
- **Institutional Capacity**
 - need for trained, well resourced staff members
 - operator training and certification
- **Regulatory**
 - patchwork approach at state level
 - permit bottleneck
- **Financing**
 - integrating into capital improvement plans
 - funding multi-benefit projects



Stock photo

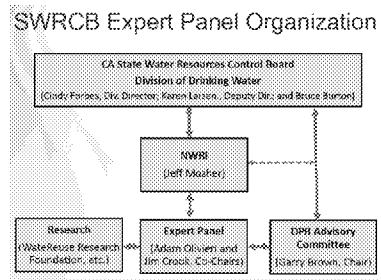
When we started putting together the meeting, we thought that a big part of our effort would be dedicated to identifying barriers to potable water reuse. But as we starting working as a group we saw that many of these barriers were perceived. We can call them challenges, but for every challenge, we could find examples of how they were overcome or at least good ideas about how to overcome them. (I may make a separate slide for each one)...

Legitimacy is Broader than Public Acceptance

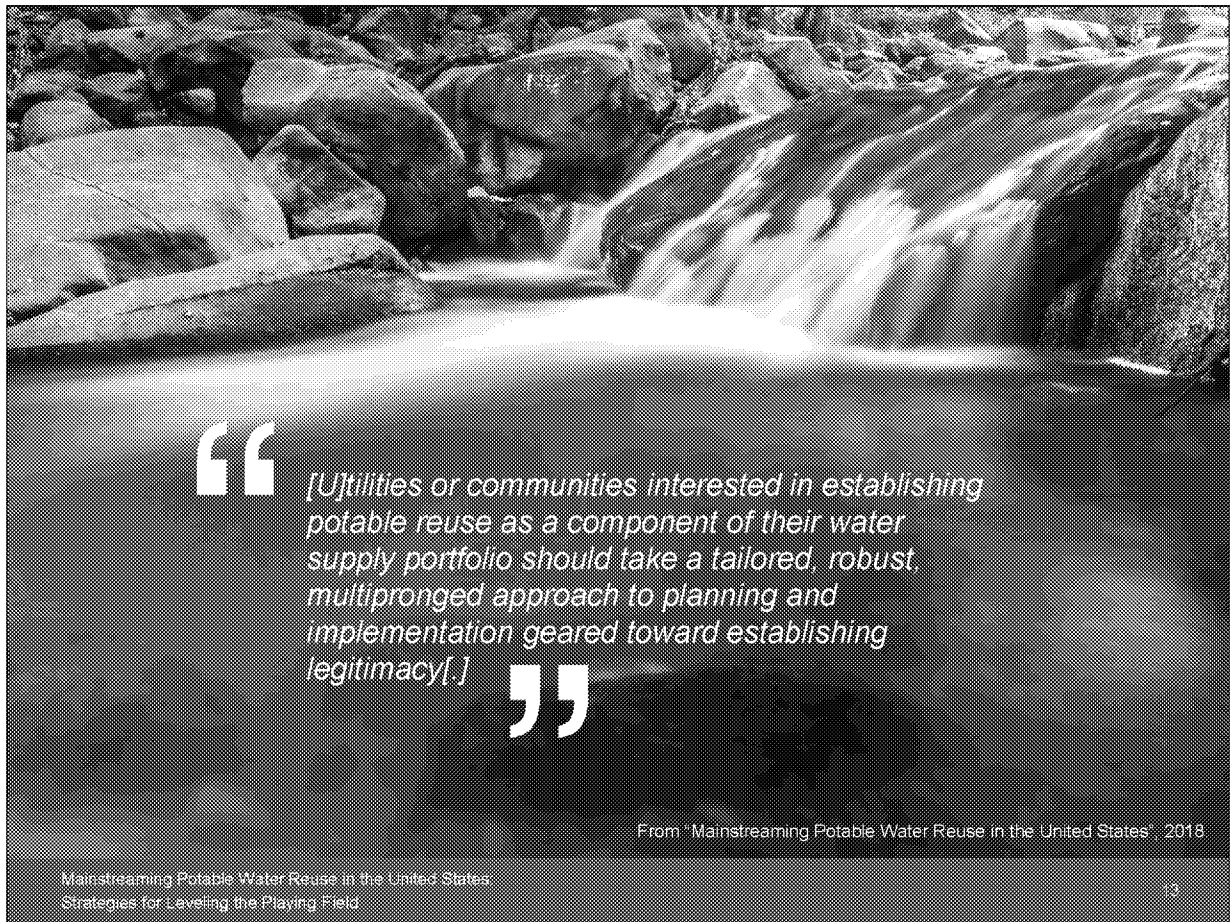
- **Pragmatic Legitimacy:** Project serves community interests
- **Moral Legitimacy:** Project is overseen by trusted institutions
- **Cognitive Legitimacy:** Potable water reuse is a daily experience
(see Harris-Lovett et al., 2015, ES&T, 49, 7552–7561)



Courtesy of City of San Diego



Introduce legitimacy framework



“ [U]tilities or communities interested in establishing potable reuse as a component of their water supply portfolio should take a tailored, robust, multipronged approach to planning and implementation geared toward establishing legitimacy[.] ”

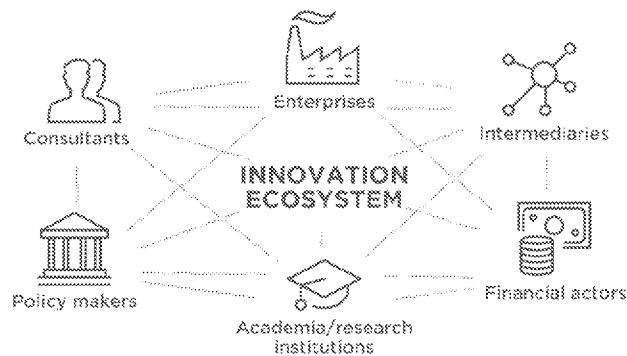
From "Mainstreaming Potable Water Reuse in the United States", 2018.

Mainstreaming Potable Water Reuse in the United States:
Strategies for Leveling the Playing Field

13

One of our key recommendations is that utilities think in these terms from the start. Ted comes on at this point and discusses how he employed some of these approaches to rapidly advance the SWIFT project (without being aware of a specific framework).

Innovation Ecosystems Enable Potable Water Reuse



Explain what is meant by innovation ecosystems and how they have supported the growth of reuse in SoCal. Discuss the challenge at the national level. WRF is filling some of this void on the technical issues by enabling communication but there is a need for more support and dialog at the national level. This workshop and today's meeting is part of an effort to address this issue.

"EPA supports water reuse as part of an integrated water resources management approach developed at the state and local level to meet the water needs of multiple sectors including agriculture, industry, drinking water, and ecosystem protection." – Peter Grevatt, Director, U.S. EPA Office of Groundwater and Drinking Water

Peter comes on at this point a makes a statement about how EPA HQ sees its role in facilitating the innovation ecosystem.

Recommendations for Advancing Individual Projects

- Assess/improve utility's reputation with customers and decision makers
- Communication, outreach, and involvement strategies must build trust and credibility through comprehensive engagement and transparency
- External expert panels improve projects and advance legitimization
- Embrace integrated water management and be prepared to navigate applicable governance structures
- Financing plans should consider long-term capital improvement and asset management needs, as well as alternative financing mechanisms

Leveling the Playing Field

- Create protective and workable regulatory structures at the state level.
- Develop approaches for overcoming governance fragmentation
- Understand and resolve water rights issues
- Create incentives that account for full benefits of potable water reuse
- Reassess relationship between planned and unplanned water reuse
- Develop certification/training programs for operator and permit writers
- Foster innovation ecosystems and knowledge sharing

THANK YOU

David Sedlak
sedlak@berkeley.edu

For more information and a link to the report:
<http://bwc.berkeley.edu/advancing-dialogue-potable-water-reuse>

From: Flaharty, Stephanie [Flaharty.Stephanie@epa.gov]
Sent: 12/11/2018 11:55:55 AM
To: Grevatt, Peter [Grevatt.Peter@epa.gov]; McLain, Jennifer [McLain.Jennifer@epa.gov]; Burneson, Eric [Burneson.Eric@epa.gov]; Thompkins, Anita [Thompkins.Anita@epa.gov]; Travers, David [Travers.David@epa.gov]; Carroll, Gregory [Carroll.Gregory@epa.gov]; Hautman, Dan [Hautman.Dan@epa.gov]; Newberry, Debbie [Newberry.Debbie@epa.gov]; Rodgers-Jenkins, Crystal [Rodgers-Jenkins.Crystal@epa.gov]; Corr, Elizabeth [Corr.Elizabeth@epa.gov]; Bergman, Ronald [Bergman.Ronald@epa.gov]; Bates, William [bates.william@epa.gov]; Plastino, Michael [Plastino.Michael@epa.gov]; Lopez-Carbo, Maria [Lopez-Carbo.Maria@epa.gov]; Workman, Rosemary [Workman.Rosemary@epa.gov]; Tidwell-Shelton, Patricia [Tidwell-Shelton.Patricia@epa.gov]; Schmelling, Dan [Schmelling.Dan@epa.gov]; Fort, Felecia [Fort.Felecia@epa.gov]; Albert, Ryan [Albert.Ryan@epa.gov]; Tiago, Joseph [Tiago.Joseph@epa.gov]; Wadlington, Christina [Wadlington.Christina@epa.gov]; Bissonette, Eric [Bissonette.Eric@epa.gov]; Cooper, Tiffany [Cooper.Tiffany@epa.gov]
Subject: Inside EPA: Grevatt to head Water Research Foundation

Congratulations to Peter Grevatt!

Grevatt to head Water Research Foundation

December 10, 2018

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Message

From: Matthew J Corson [Matthew.Corson@amwater.com]
Sent: 12/10/2018 9:18:38 PM
To: Grevatt, Peter [Grevatt.Peter@epa.gov]
Subject: FW: WRF Announces New CEO

Peter –

It does indeed look like our paths will cross again. What an exciting opportunity.

Congratulations!

Matt

Matthew J. Corson, P.E.
Director, Environmental Compliance and Stewardship

American Water
1 Water Street
Camden, NJ 08102

matthew.corson@amwater.com

From: The Water Research Foundation <announcements@waterrfnews.org>
Sent: Monday, December 10, 2018 2:28 PM
To: Matthew J Corson <Matthew.Corson@amwater.com>
Subject: WRF Announces New CEO

EXTERNAL EMAIL - "Think before you click!"

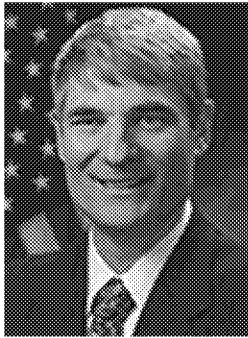
We Welcome Peter Grevatt to Our Team

[View this mailing online](#)



Announcement

The Water Research Foundation Names Peter Grevatt as new Chief Executive Officer



December 10, 2018 - The Water Research Foundation (WRF) has named Dr. Peter Grevatt as Chief Executive Officer, effective in February 2019.

"We are thrilled that Peter will be leading The Water Research Foundation team," said Kevin Shafer, co-Chair of the WRF Board of Directors. "Throughout his career, Peter has demonstrated strong leadership and exceptional communication skills, combined with extensive water research knowledge. He's an experienced and respected thought leader throughout the water sector and an ideal fit to lead WRF into the future."

Grevatt has over 30 years of experience leading the implementation of public health and environmental protection programs including significant national leadership experience in the water sector. Most recently, Grevatt served as Director of EPA's Office of Ground Water and Drinking Water (OGWDW). At OGWDW, he was responsible for ensuring the safety of the nation's drinking water supply through the development and implementation of national drinking water standards, oversight and funding of state drinking water programs, and the implementation of source water protection and underground injection control programs.

Prior to joining OGWDW in October 2012, Grevatt served as the Director of the Office of Children's Health Protection and as the Senior Advisor to EPA's Administrator for Children's Environmental Health. Grevatt has held leadership roles in EPA's national hazardous waste and water quality programs. Grevatt received his MS and PhD degrees in Basic Medical Sciences from New York University Medical Center and earned his bachelor's degree in Biology from Earlham College.

"I could not be more excited to join with the great professionals at The Water Research Foundation," said Grevatt. "The Foundation is perfectly positioned to collaborate across the water sector, lead innovation in integrated water resources management, and provide the highest level of service to our subscribers and the public."

Grevatt takes over as CEO during a time of unprecedented change and opportunity for The Water Research Foundation. In January 2018, the Water Environment & Reuse Foundation and the Water Research Foundation integrated to become the world's leading water research organization. The integration represented the evolution of water research issues, the overlap between water, wastewater, stormwater, and reuse, and efficiencies to be gained through a consolidated research program. The new organization serves as a model for collaboration across the water sector.

While major strides have been made in the last year, much work remains in not only consolidating WRF's research programs, subscriber services, and other programs, but tackling pressing water sector issues

such as aging infrastructure, dwindling water supplies, and lead in drinking water, plus opportunities in resource recovery and technology development and testing.

Grevatt replaces Robert Renner, who will retire. Renner has led the Water Research Foundation since 2005. Under Renner's leadership, the legacy Water Research Foundation successfully transitioned from primarily a drinking water organization to focusing on the entire water sector, and then the integration with WE&RF.

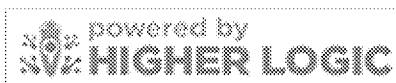
"Rob's technical knowledge, communication skills, leadership and management capabilities, and ability to nurture professional relationships and trust throughout the water community have served WRF well, especially during this transition to a One Water approach," said Chuck Murray, WRF Board of Directors co-Chair. "Rob's strong commitment to improving subscriber value is obvious in the many new ways WRF now prioritizes research and communicates results. It has been a great privilege to work with Rob for these last 14 years."

The Water Research Foundation
6666 W. Quincy Avenue
Denver, CO 80235-3098
(303) 347.6100



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www.amwater.com

Message

From: Ground Water Protection Council [dyates@gwpc.org]
Sent: 1/2/2019 9:37:51 PM
To: Grevatt, Peter [Grevatt.Peter@epa.gov]
Subject: Communique



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Register Today for the UIC Conference

Preliminary Agenda Online

Registration is now online for the upcoming UIC Conference, to be held **February 24-27, in Fort Worth, Texas.**

A hotel room block is available at the Sheraton Fort Worth until February 1.



To find out more about attendance and sponsorship opportunities and hotel information, visit the GWPC Web site.

We hope to see you there!

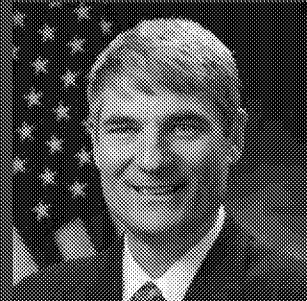
[Register Today](#)

[Preliminary Agenda](#)

[Hotel Room Block](#)

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Most recently, Grevatt served as Director of EPA's Office of Ground Water and Drinking Water (OGWDW).

[Read More](#)

Apple to Partner on Long-Term Water Supply Project

Tech giant to fund \$8.7 million aquifer system

(KTVZ.COM)

The city of Prineville and Apple announced Wednesday they have teamed up to create a resilient, cost-effective and sustainable water supply solution to meet growing community demands for generations to come

The city's building an Aquifer Storage and Recovery (ASR) system, a water management tool that allows the city to meet peak demands by taking advantage of the natural storage space found in geologic formations underground.

They expect the system to be up and running by the summer of 2020 with all construction finished by 2021.

[Read Article](#)

Upcoming Events



GWPC UIC Conference

Fort Worth, Texas

February 24-27, 2019

More information coming soon.

Check www.gwpc.org for more information and updates.



GWPC Annual Forum

Oklahoma City, Oklahoma

September 15-18, 2019

More information coming soon.

Check www.gwpc.org for more information and updates.



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Oklahoma City, OK 73142

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Message

From: Albert, Ryan [Albert.Ryan@epa.gov]
Sent: 4/23/2018 12:20:28 PM
To: Grevatt, Peter [Grevatt.Peter@epa.gov]
Subject: RE: WRF Research Conference - Tuesday morning plenary session with David Sedlak

Thanks Peter,

I'll look forward to this session as well. Anytime I've heard David speak, he puts forward good food for thought. Let us know if you need any help pulling anything together. We should have a draft of your talking points for the plenary to Christina early next week.

Best regards,
Ryan

Ryan Albert, Ph.D.
Acting Chief, Standards and Risk Reduction Branch
Standards and Risk Management Division
Office of Ground Water and Drinking Water
U.S. Environmental Protection Agency
Washington, DC
(202) 564-0763

From: Grevatt, Peter
Sent: Friday, April 20, 2018 12:30 PM
To: Albert, Ryan <Albert.Ryan@epa.gov>; Wadlington, Christina <Wadlington.Christina@epa.gov>; McClain, Jennifer <McClain.Jennifer@epa.gov>; Tiago, Joseph <Tiago.Joseph@epa.gov>
Subject: Fwd: WRF Research Conference - Tuesday morning plenary session with David Sedlak

FYI. Not public yet!

Sent from my iPhone

Begin forwarded message:

From: "Smith, DavidW" <Smith.DavidW@epa.gov>
To: "Grevatt, Peter" <Grevatt.Peter@epa.gov>, "Lape, Jeff" <lape.jeff@epa.gov>
Subject: RE: WRF Research Conference - Tuesday morning plenary session with David Sedlak

Thanks Peter- As you will be discussing this soon, I wanted to send you the final report. Jeff, you as well since you came up with the funding. Will send it to all the other attendees early next week. It's being posted on our Regional recycling/reuse website likely today but we are in the process of aligning/migrating that page with the new EPA internet, so the link may move in future. Perhaps on the same page that features our excellent 2017 Potable Reuse Compendium document? We will coordinate with HQ internet and communications folks on that over the next month or so. ReNUWIt will also post on its website. Thanks to you both- we are happy about how this came out and are excited that it will get such a prominent role at the WRF conference next month.

Best
Dave Smith

-----Original Message-----
From: Grevatt, Peter

Sent: Friday, April 20, 2018 9:12 AM

To: David Sedlak <sedlak@berkeley.edu>; Henifin, Ted <EHenifin@hrsd.com>

Cc: Julie Minton <jminton@waterrf.org>; Wadlington, Christina <Wadlington.Christina@epa.gov>;

Smith, DavidW <Smith.DavidW@epa.gov>

Subject: RE: WRF Research Conference - Tuesday morning plenary session with David Sedlak

Thanks David. I am able to speak on these issues. I think the most relevant discussion for the group will be on the legitimacy framework and I think the value here will be in discussion with the assembled audience rather than in presentations from us. I would recommend that one of you give an overview of the event including the framework and then the others of us comment with our perspectives on that to begin a discussion with the larger audience. Julie, you could be helpful in sharing your perspectives on how to best build the bridge with the audience, since the wingspread event was mostly focused on higher level policy issues and the assembled group leans more in the direction of research.

-----Original Message-----

From: David Sedlak [<mailto:sedlak@berkeley.edu>]

Sent: Friday, April 20, 2018 11:52 AM

To: Henifin, Ted <EHenifin@hrsd.com>; Grevatt, Peter <Grevatt.Peter@epa.gov>

Cc: Julie Minton <jminton@waterrf.org>; Wadlington, Christina <Wadlington.Christina@epa.gov>;

Smith, DavidW <Smith.DavidW@epa.gov>

Subject: Re: WRF Research Conference - Tuesday morning plenary session with David Sedlak

Ted and Peter:

Looping Dave Smith in for his opinions.

Great to have you both on board.

Hearing no ideas about the session and with a deadline from WRF for giving a description, let me suggest the following format for our one hour.

Let's try to keep the prepared remarks down to 30 minutes at the most.

Why did we meet? (10 minutes): What are the challenges facing regions of the country that are not already involved in reuse? What is the potential and why is it only slowly being recognized?

What did we learn? (10 minutes): Start with a list of attendees and the agenda of the meeting. Introduce the legitimacy framework and gave a few compelling examples of successes (and possibly failures). Insights across all of the major areas.

What do we recommend? (10 minutes): Go through the list of recommendations and explain what they are and tangible ways that we could take this forward.

After this, we can open it up for questions.

I think that we can draw from some of the presentations at TJF for the intro and what we learned sections. We still have the powerpoints.

My question to you is as follows: Which one of the 10-minute sections do you feel comfortable presenting? Peter, if you need permission before giving a talk, Ted and I can handle it. I am envisioning all three of us fielding questions and using the second half hour to identify action items from the group.

As for a title for the session, I think we go with the title of the report:

Mainstreaming Potable Water Reuse in the United States: Strategies for Leveling the Playing Field

Description: In October 2017, a group of leaders from utilities, government, NGOs and academia met at the Johnson Foundation at Wingspread to discuss the steps needed to assure that potable water reuse would be considered by water resource planners as a means of enhancing urban water security. To attendees of the WaterReuse Research Conference, this concept may seem obvious, but many utilities, regulators and elected officials are still unfamiliar and uncertain about the technology. Furthermore, they have little experience in how to best overcome the institutional barriers to implementing potable water reuse projects. The meeting attendees described the current situation and identified approaches for helping to hasten the spread of potable water reuse. This session will review the outcomes of the workshop and engage audience members in a discussion of actions that the community can take in the next few years.

David

On Apr 18, 2018, at 1:56 PM, David Sedlak <sedlak@berkeley.edu> wrote:

Peter and Ted:

Do I take this to mean that you will both be attending the Tuesday morning session? If so, let's kick around a few ideas about how we can best use the time. My goal is to briefly summarize the meeting (i.e., why we met, who attended and what we learned) and get right into the recommendations and a discussion of next steps.

if you can share with me your thoughts about how to do this and if we need to consider some other things we can get right into the question of how we can be most effective. We can follow up with a call or we can just keep it static on e-mail if we don't see a need to meet.

Thanks for your help with the October meeting and your willingness to help us advance the discussion. And thanks to WRF for giving us a platform to publicize the meeting.

David

On Apr 18, 2018, at 1:11 PM, Henifin, Ted <EHenifin@hrsdc.com> wrote:

Julie,

I can confirm now. Other obligation for the 9th in Philly has been rescheduled. Thanks for thinking about me. I am always humbled to be asked to participate with such great people.

Ted

Sent from my iPad

On Apr 18, 2018, at 3:26 PM, Julie Minton
<jminton@waterrf.org<<mailto:jminton@waterrf.org>>> wrote:

Dear Peter,

It was wonderful to see you yesterday in DC (you too, Ted!) - it was a great afternoon.

As mentioned, we invite you to participate with David Sedlak and Ted Henifin (still confirming) on the Tuesday 5/8 morning plenary session Mainstreaming Potable Water Reuse in the United States: Strategies for Leveling the Playing Field. As David has suggested, it will be a great way to launch the Wingspread report and engage participants in a discussion of next steps identified at the end of the report.

We're so glad that you are interested, and look forward to hearing whether you are able to rearrange your travel to stay an extra day.

Please let us know if you have any questions.

Many thanks!

Julie

Julie Minton | Director of Strategic Initiatives



The Water Research Foundation

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Message

From: Hughes, Jeffrey [jhughes@sog.unc.edu]
Sent: 12/10/2018 9:08:08 PM
To: Grevatt, Peter [Grevatt.Peter@epa.gov]
Subject: FW: WRF Announces New CEO

I guess people are now going to come to me for research funding instead of waivers..... Congratulations!

From: The Water Research Foundation <announcements@waterrfnews.org>
Sent: Monday, December 10, 2018 2:28 PM
To: Hughes, Jeffrey <jhughes@sog.unc.edu>
Subject: WRF Announces New CEO

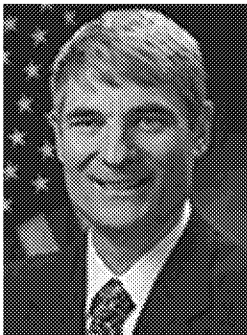
We Welcome Peter Grevatt to Our Team

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Message

From: Radhika Fox [RFox@uswateralliance.org]
Sent: 12/10/2018 8:54:41 PM
To: Grevatt, Peter [Grevatt.Peter@epa.gov]
Subject: FW: WRF Announces New CEO

What an excellent choice 😊

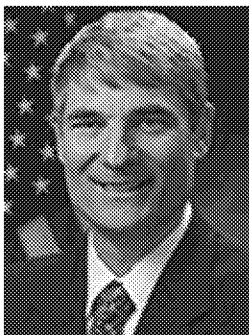
From: The Water Research Foundation <announcements@waterrfnews.org>
Sent: Monday, December 10, 2018 11:28 AM
To: Radhika Fox <RFox@uswateralliance.org>
Subject: WRF Announces New CEO

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Message

From: Shanaghan, Peter [Shanaghan.Peter@epa.gov]
Sent: 12/10/2018 8:49:23 PM
To: Grevatt, Peter [Grevatt.Peter@epa.gov]
Subject: FW: WRF Announces New CEO

Dear Dr. Grevatt: Congratulations on assuming leadership of the Water Research Foundation.

I have been and remain a strong WRF supporter and user of their products. I serve on technical advisory panels for a number of research foundation projects.

I look forward to working with you in this new capacity.

Best wishes for a smooth transition! Will you be relocating to Denver? WRF headquarters enjoys a beautiful setting!

Warmest personal regards,
Peter

Peter E. Shanaghan, M.Eng.
Senior Environmental Engineer
Infrastructure Branch – Drinking Water Protection Division
United States Environmental Protection Agency (MC-4606M)
Washington, DC 20460

E-mail: shanaghan.peter@epa.gov
Phone: 202-564-3848
Office Location: WJC East – 2145K

From: The Water Research Foundation <announcements@waterrfnews.org>
Sent: Monday, December 10, 2018 2:28 PM
To: Shanaghan, Peter <Shanaghan.Peter@epa.gov>
Subject: WRF Announces New CEO

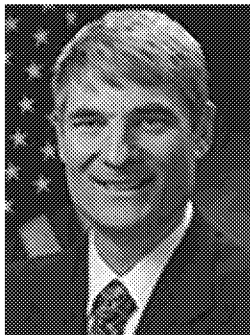
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Message

From: Thompkins, Anita [Thompkins.Anita@epa.gov]
Sent: 12/10/2018 7:47:25 PM
To: Grevatt, Peter [Grevatt.Peter@epa.gov]
CC: Burneson, Eric [Burneson.Eric@epa.gov]; Mclain, Jennifer [Mclain.Jennifer@epa.gov]; Travers, David [Travers.David@epa.gov]; Newberry, Debbie [Newberry.Debbie@epa.gov]; Rodgers-Jenkins, Crystal [Rodgers-Jenkins.Crystal@epa.gov]; Bergman, Ronald [Bergman.Ronald@epa.gov]; Corr, Elizabeth [Corr.Elizabeth@epa.gov]
Subject: WRF Announces New CEO-- Congratulations!!!

CONGRATULATIONS!!!

Anita Maria Thompkins
Director, Drinking Water Protection Division
Office of Ground Water and Drinking Water
U.S. Environmental Protection Agency
Washington, DC



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Announcement



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Message

From: Tracy Mehan [tmehan@awwa.org]
Sent: 12/10/2018 7:34:40 PM
To: Grevatt, Peter [Grevatt.Peter@epa.gov]
Subject: FW: WRF Announces New CEO

Congratulations!

Tracy

From: The Water Research Foundation <announcements@waterrfnews.org>
Sent: Monday, December 10, 2018 2:28 PM
To: Tracy Mehan <tmehan@awwa.org>
Subject: WRF Announces New CEO

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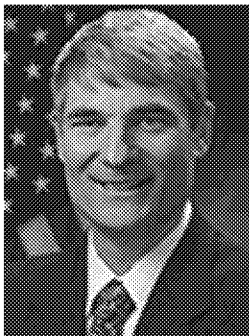
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Message

From: Tiago, Joseph [Tiago.Joseph@epa.gov]
Sent: 12/10/2018 7:06:32 PM
To: Wadlington, Christina [Wadlington.Christina@epa.gov]; Grevatt, Peter [Grevatt.Peter@epa.gov]; McClain, Jennifer [McClain.Jennifer@epa.gov]
Subject: RE: It's posted

Awesome!

From: Wadlington, Christina
Sent: Monday, December 10, 2018 2:02 PM
To: Grevatt, Peter <Grevatt.Peter@epa.gov>; McClain, Jennifer <McClain.Jennifer@epa.gov>; Tiago, Joseph <Tiago.Joseph@epa.gov>
Subject: It's posted

[http://www.werf.org/c/PressReleases/2018/The Water Research Foundation Names Peter Grevatt as new Chief Executive Officer.aspx](http://www.werf.org/c/PressReleases/2018/The_Water_Research_Foundation_Names_Peter_Grevatt_as_new_Chief_Executive_Officer.aspx)

Message

From: Wadlington, Christina [Wadlington.Christina@epa.gov]
Sent: 12/10/2018 7:02:19 PM
To: Grevatt, Peter [Grevatt.Peter@epa.gov]; Mclain, Jennifer [Mclain.Jennifer@epa.gov]; Tiago, Joseph [Tiago.Joseph@epa.gov]
Subject: It's posted

http://www.werf.org/c/PressReleases/2018/The_Water_Research_Foundation_Names_Peter_Grevatt_as_new_Chief_Executive_Officer.aspx



Mainstreaming Potable Water Reuse in the United States:

Strategies for Leveling
the Playing Field



April 2018

ED_002483_00000041-00001

Foreword: A Note from the Organizers

As interest in potable water reuse intensifies among municipal utilities, state and federal governments, researchers, and supporting organizations, significant effort has been focused on technical objectives related to ensuring system performance and reliability, documenting contaminant removal and public health protection, and reducing project costs. These efforts are paying off. Utilities in certain water-stressed regions are implementing successful water reuse projects, particularly in states with a long history of innovative water projects (e.g., California, Texas). Many states where interest in potable reuse is growing (e.g., Colorado, Oklahoma, North Carolina, Florida) could benefit from the experience and insights of those on the leading edge as they develop the expertise and mechanisms necessary to plan, regulate, and manage water reuse systems.

The technical and engineering capacity to safely reuse treated wastewater for potable purposes has been well documented. Professional societies and utility-sponsored organizations have helped researchers and utilities share technical knowledge about the latest developments in treatment technology, water quality, and monitoring. Meanwhile, case studies and expert forums indicate that these same stakeholders have encountered significant institutional hurdles in implementing potable water reuse projects, including planning, governance, legal/regulatory, financial, political, and sociological challenges. To date utility managers, technical experts, regulators, and other stakeholders have had few opportunities to discuss strategies for overcoming non-technical or institutional implementation challenges. As a result, communities that may benefit from potable water reuse but lack experience with the practice tend to be deterred from considering the practice to be a viable water supply option.

To address the issue of institutional hurdles to potable reuse, the U.S. Environmental Protection Agency (EPA), in partnership with the ReNUWit (Reinventing the Nation's Urban Water Infrastructure) research consortium and The Johnson Foundation at Wingspread, convened a group of national, regional, and local leaders for an intensive workshop on October 25–27, 2017. Participants included diverse experts from across the U.S.—utility managers, state and federal regulators, water sector association representatives, environmental advocates, academics, researchers, and equipment and service providers—who generated the ideas and insights upon which this report is based. The group explored the institutional complexities and challenges associated with implementing potable water reuse projects and outlined practical strategies to elevate potable reuse to the same state of legitimacy and acceptance as established drinking water sources. The workshop did not address technical and public health dimensions of potable reuse.

This report is intended to inform the broader dialogue about water reuse through a specific focus on potable reuse. The goals are to help municipalities and utilities that are considering potable reuse develop their approach and to help advance the efforts of those who are ready to implement projects. Additionally, we hope to inform the U.S. EPA, state agencies, and other key stakeholders about how they can support the

expansion of potable water reuse across the United States. We hope the report is useful in your endeavors and strongly encourage other leaders in the field to invest in building capacity and thinking creatively about how to act upon the ideas presented here.

Sincerely,



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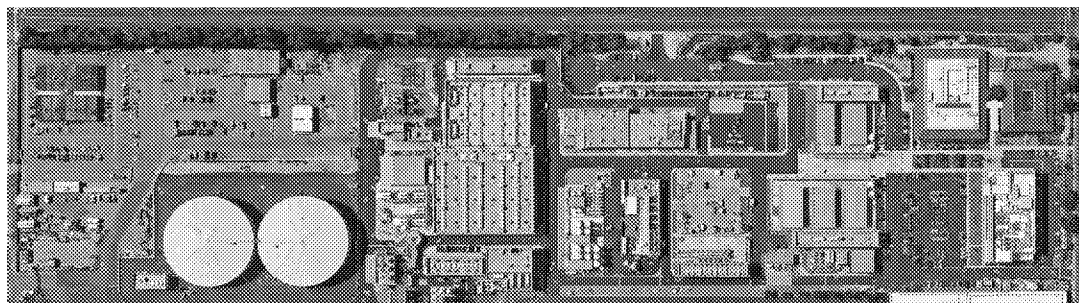
The Maturation of Potable Water Reuse

The practice of potable water reuse has evolved in important ways in the United States over the past 50 years, especially during the last 25 years. Prior to the 1990s, many cities and public health regulators recognized that municipal wastewater effluent accounted for a significant fraction of the surface water entering their drinking water treatment plants.¹ Wastewater utilities generally addressed this situation by treating and disinfecting effluent consistent with Clean Water Act permitting requirements and, where feasible, minimizing the fraction of wastewater in drinking water intakes. Because of concerns associated with the presence of wastewater and contaminants from other sources (e.g., industrial pollution, agricultural runoff), some cities began to upgrade drinking water treatment plants by installing advanced treatment technologies to provide enhanced safeguards for public health protection. As water availability and water quality issues became more prevalent in rapidly growing areas, water managers soon began to explicitly consider the use of wastewater effluent to augment water supplies.

Driven by these interests, a modest number of potable reuse projects were built during the 1960s through the 1980s. The earliest projects were built in Southern California, with treated wastewater used to recharge groundwater aquifers. Built in 1978 in Fairfax County, Virginia, the Upper Occoquan Service Authority was the first project in the United States to use effluent from an advanced treatment plant to directly augment a surface water reservoir.⁴ During the 1980s two additional projects were developed successfully in Texas and Georgia.⁵ As water scarcity became a more serious issue in the 1990s, other cities sought to replicate the practice with additional projects built in California, Georgia, and Arizona. However, the highly visible rejection of a handful of projects in California in the late 1990s and early 2000s cast doubt on the future expansion of potable reuse.

What practices qualify as “potable water reuse”?

There is no single definition of potable water reuse, but the practice generally involves the planned use of treated municipal wastewater for augmenting drinking water supplies.² Potable water reuse is defined here as encompassing a continuum of applications ranging from different types of indirect potable reuse (e.g., systems in which communities use surface water or groundwater containing treated wastewater as a drinking water source) to flange-to-flange direct potable reuse (e.g., systems that introduce purified water directly back into an existing water supply system).³ The ideas and strategies presented in this report are relevant for any project falling within this broad spectrum of potable water reuse practices. However, the report is designed to focus upon planned potable reuse practices.



Orange County
Groundwater
Replenishment System.
Courtesy of Orange
County Water District.



Upper Occoquan Sewer Authority
Courtesy Upper Occoquan Sewer
Authority. Courtesy of Stockholm
International Water Institute.

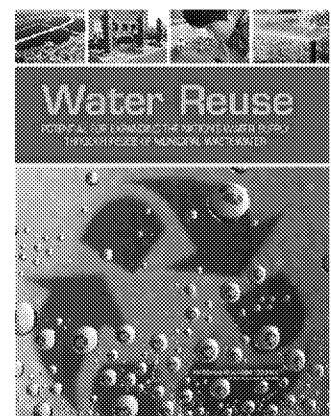
Several developments since the late 1990s reflect evolving attitudes among water professionals about potable water reuse.

In 1998, a National Research Council (NRC) study, *Issues in Potable Reuse: The Viability of Augmenting Drinking Water Supplies with Reclaimed Water*, indicated that use of reclaimed water was safe to use to augment a water supply but should be a “solution of last resort.”⁶ This statement reflected questions and uncertainties about the practice that could not be resolved without more data from full-scale potable water reuse systems. Although several new potable water reuse projects were built in California, Arizona, and Colorado over the next decade, lingering doubts remained among regulators, practitioners, and members of the public. Shortly after

publication of the 1998 NRC study, researchers began reporting the presence of trace concentrations of pharmaceuticals and ingredients from personal care products in wastewater effluent and effluent-receiving surface waters.⁷ A lack of knowledge about the potential risks associated with exposure to these contaminants and an absence of information on the ability of potable reuse systems to remove the contaminants raised further concerns about the practice.

Over the next decade, advances in the science and technologies associated with potable water reuse helped reduce concerns about public health and boost confidence in and acceptance of the practice among both water professionals and the public. Operators gained experience with the technologies and researchers collected more data on the ability of plants to remove contaminants. Expert review panels organized by the National Water Research Institute (NWRI) helped vet, validate, and summarize the data.⁸ In addition, proponents of potable reuse learned how to communicate more effectively with the public and decision makers about the safety and reliability of the practice. Public acceptance of alternative water supply sources has also increased as conventional sources have been adversely affected by recent severe drought in states like Texas and California, and demand has increased amid rapid population growth in different regions across the country.⁹ For instance, the success of the Orange County Groundwater Replenishment System (GWRS) since 2008 highlighted the effectiveness of indirect potable reuse for bolstering drinking water supplies through groundwater replenishment in semi-arid Southern California.¹⁰

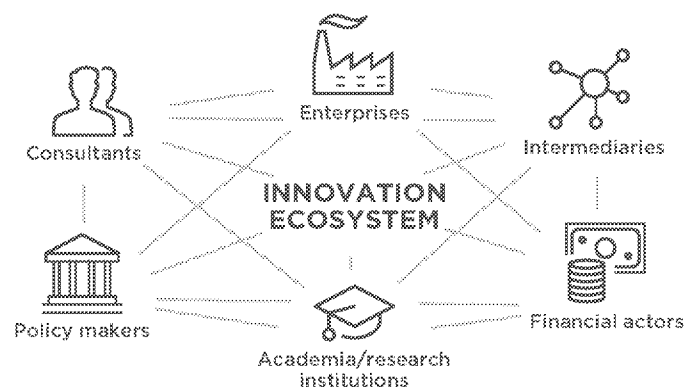
The 2012 NRC report *Water Reuse: Potential for Expanding the Nation's Water Supply Through Reuse of Municipal Wastewater* concluded that “[e]xpanding water reuse – the use of treated wastewater for beneficial purposes including irrigation, industrial uses, and drinking water augmentation – could significantly increase the nation's total available water resources.”¹¹ This clear endorsement of reuse as an option to supplement and diversify drinking water supply by a science-based, expert body played an important role in convincing decision makers that the practice of potable water reuse was worthy of consideration in the water resource planning process. Building upon the NRC's positive assessment of the role potable water reuse can have in developing resilient water supplies, organizations representing water professionals increased their activities in support of mainstreaming the technology. In 2014, the American Water Works Association issued a policy statement endorsing the use of reclaimed water to replenish drinking water sources and manage aquifer levels, and suggested that direct potable reuse (i.e., the use of highly treated



wastewater as a water supply without the use of an intermediate environmental buffer) may be a viable option assuming appropriate treatment and public health safeguards.¹² Water sector professionals have also increasingly embraced potable water reuse as evidenced by participation in the WaterReuse Research Foundation's Direct Potable Reuse Initiative, which raised \$6 million from consulting firms and utilities in California from 2012-2016 and leveraged that funding into 34 research projects valued at \$24 million.¹³ Additionally, the membership of the WaterReuse Association represents more than 200 communities and 60 million utility customers around the country and plays a critical role advocating for the practice.¹⁴

The growing interest in potable reuse has coincided with a broader trend in the water sector in which the management of drinking water, wastewater, and stormwater are becoming increasingly integrated. As part of this trend, the three most prominent research foundations in the water sector (Water Research Foundation, Water Environment Research Foundation, and WaterReuse Research Foundation) have been integrated into a single organization, The Water Research Foundation.¹⁵ Because potable reuse, and water reuse in general, is predicated on bridging the gap between wastewater and drinking water, these mergers and the broader trend toward integrated water management can be expected to further interest in potable reuse as a management strategy for addressing a variety of issues from water supply sustainability, to nutrient management and impacts from climate change.

The recent trajectory of potable water reuse reflects the development of a community of practitioners who understand the ingredients necessary to successfully implement potable reuse projects along with greater acceptance among the public and decision makers. However, the current potable water reuse "innovation ecosystem" in the United States—the network of professionals with relevant knowledge and experience—remains generally limited to Southern California, Texas, and a few other cities in the Southwest, Southeast, and mid-Atlantic. Meanwhile, a growing number of states and water utilities in other regions are actively investigating potable water reuse projects, but a lack of experience among regulators, utility leaders, and consultants continues to pose challenges to project implementation. While public acceptance of potable water reuse has generally increased over the past 25 years, opinions still vary regionally. Communities that are familiar with the practice because of operational projects or ongoing discussion of it as an option tend to be more supportive. In places where the practice is still perceived as novel, more skepticism exists.

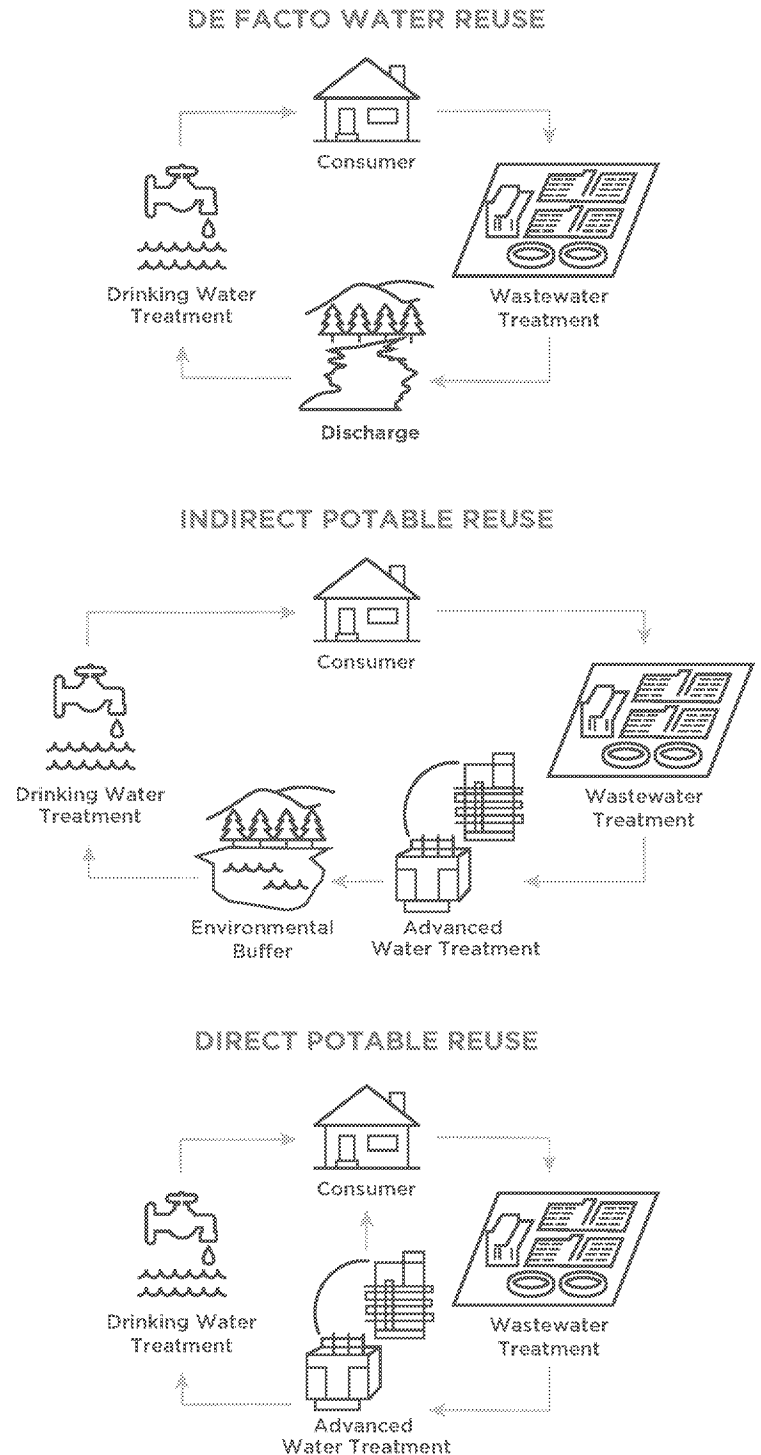


The present challenge centers on how best to extend the established trajectory of potable water reuse and accelerate diffusion of the practice to places where it could provide a solution to meet local needs. This report presents a synthesis of the ideas shared by the early adopters and thought leaders involved in the October 2017 workshop about how to build the legitimacy and advance the practice of potable water reuse nationally. It is one example of the knowledge transfer needed to overcome existing institutional challenges and expand the innovation ecosystem needed to safely expand the application of potable water reuse across the nation. The balance of this report highlights specific factors for successful implementation of projects, including strategies to build legitimacy, plan and develop projects effectively, and create an enabling policy environment so that potable water reuse will ultimately be considered a mainstream water supply option in the United States.

Potable Water Reuse as Part of a Diversified Water Supply

Potable water reuse is just one option among many in the development of a diversified, resilient water supply portfolio and should be considered alongside other more widely accepted water resource options such as conservation, imported water, desalination, and non-potable water reuse. As with the development of any water source, utilities and planners must carefully evaluate the potential costs, benefits, and drawbacks of potable water reuse within a broader water planning and watershed management context. This requires understanding community values and priorities and examining how different supply options may affect or be affected by existing governance structures, wastewater and stormwater management systems, sustainability goals, and local or regional long-term planning processes.

Due to public health concerns associated with the status of potable reuse as a relatively novel practice and the inherent risks associated with employing wastewater as a water source, utilities must clear a particularly high bar to successfully implement and maintain potable water reuse projects in the U.S. As a result, potable water reuse projects are often subjected to more intensive treatment requirements, monitoring, and control than other water sources. In addition to developing a water source that is less susceptible to drought, the practice may produce water quality improvements at the watershed scale. In cases of indirect potable reuse, highly treated wastewater discharged into an environmental buffer (e.g., a groundwater aquifer or a surface water reservoir, lake,



Courtesy of WaterReuse Association.

or river) may be of higher quality than the source water supplies. Other ancillary benefits could include reducing ecosystem impacts of surface water diversions and avoiding overdraft of groundwater aquifers. On the other hand, direct potable reuse systems may have unintended consequences such as reduced in-stream flows and related adverse water quality impacts because of less dilution of pollutants, as well as infringement on downstream water rights.

Accelerating an Established Trajectory: Ingredients for Success

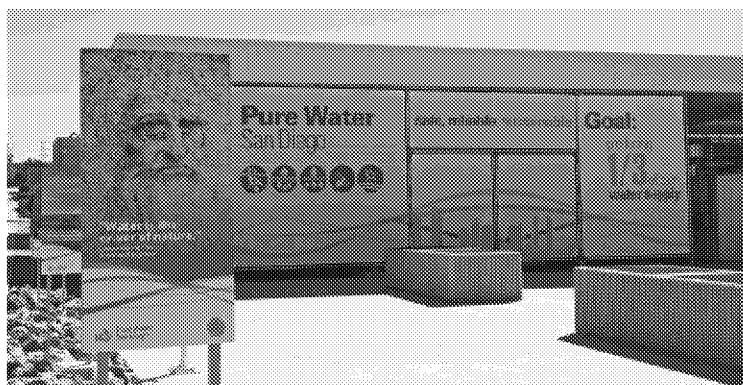
While potable reuse projects have slowly been proliferating across the nation as the technology has advanced and water scarcity has increased, institutional hurdles remain on several fronts. Although utilities have made great strides, many are still learning how best to engage the public and decision makers, build understanding, and gain support for new projects, as well as how to navigate regulatory and governance structures and approaches for financing projects. In addition, the external policy and professional landscape within which utilities operate continues to evolve on the issue of potable reuse. Regulatory and legal disincentives are beginning to diminish, new regulatory structures are being created, and researchers are documenting and reporting experiences with an array of potable reuse projects and approaches more widely. The following section of this report describes strategies that can contribute to the successful implementation of potable water reuse projects in places where it makes sense, as well as those that could help accelerate the trajectory of potable water reuse toward the mainstream.

Building Legitimacy

Research shows that reliance on traditional public relations or educational outreach is often not adequate to gain public and political support for potable water reuse projects, especially in cases where the utility has not already established trust among members of the public.¹⁶ Instead utilities or communities interested in establishing potable reuse as a component of their water supply portfolio should take a tailored, robust, multipronged approach to planning and implementation geared toward establishing legitimacy rather than merely attempting to gain public acceptance of a specific project. Legitimacy is a concept that acknowledges that creating widespread trust in a technological innovation depends on strategies that target community values while also addressing sectoral and societal rules, norms, and conventions. In practice, legitimacy equates to a technology becoming “taken for granted” in society. The concept can be differentiated into three basic types, summarized as follows:¹⁷

- **Pragmatic legitimacy:** the innovation serves the self-interest of the consumer;
- **Moral legitimacy:** the innovation meets external standards set by institutions in which consumers have trust;
- **Cognitive legitimacy:** the innovation meshes with the cultural belief system and daily life experience of the consumer.

Achieving legitimacy in this robust sense goes beyond a typical public relations campaign to include other elements, such as demonstration of institutional competence and robust safety and public health protocols, stakeholder engagement in project development, and use of objective experts to provide unbiased advice. Ultimately, achieving legitimacy among community members and elected officials is the most important ingredient in the recipe because without it, a project can still fail even if a utility has addressed technological or permitting challenges.



Pure Water San Diego Facility. Courtesy of City of San Diego.

Leverage Excellent Reputation and Operations

Regardless of the size, complexity, or technical capacity of the water or wastewater utility, the reputation of the organization among community members, regulators, and other relevant governing bodies is a critical ingredient of a successful project. It is typically not sufficient to simply attempt to build trust around a certain project. Rather, a utility must have built trust over time through safe, reliable service and efficient operations to have a sound basis for pursuing potable water reuse with a good chance of success. If that is not the case, proposed projects may face moderate or intense opposition regardless of whether they are technologically sound.

For example, in the mid to late 1990s, the City of San Diego pursued its first attempt to implement a potable reuse project, which, after several years of planning, outreach, and initial environmental and some design studies, did not move forward for a variety of reasons. One of those reasons was that the project was led by staff from the wastewater division primarily because they had successfully constructed several facilities, including the treatment plant that was the proposed source of water for the potable reuse project. San Diego had been operating an advanced primary treatment process at the regional wastewater plant and receiving waivers from requirements to move to secondary treatment. While the wastewater staff interacted with some members of the environmental community, they had little regular interaction with the broader community and no noteworthy reputation among most residents. Hence, it appeared to many that the potable reuse project was a way for the city to reduce the volume of wastewater it discharged by putting it into the drinking water supply, keeping its waiver intact.

The misperception of the proposed San Diego project among the public was exacerbated by the introduction of the phrase “toilet to tap” in the local media, a term originally conceived by opponents of a different proposed potable reuse project in the state. In addition, media reports about contaminants in drinking water began to surface nationally and the proposed San Diego project was used as a wedge issue in local and state political races. The lack of visibility of the City of San Diego’s water division on the proposed project and a failure of the wastewater and water divisions to counteract misleading information in the media with proactive local community engagement exacerbated misperceptions engendered by the “toilet-to-tap” moniker. Ultimately the project stalled because of the wastewater division’s lack of reputation and the water division’s lack of visibility.

Years later, San Diego's Public Utilities Department revived the proposal as an indirect potable reuse project, coined Pure Water San Diego, to increase water supply resilience and reliability for the region, to reduce dependence on water imported from the Colorado River and northern California, and to reduce ocean discharges from a regional wastewater plant.¹⁸ Pure Water San Diego has seen broad public support as the department has engaged in extensive community education and engagement, including tours and open house events at its demonstration facility where visitors learn about the science of the advanced technology and where tasting of the product water is actively encouraged. While every project is local, this case illustrates why it is important for managers contemplating whether to pursue a potable reuse project to reflect on their utility's historical service levels and standing among key stakeholders, keep policy makers informed with accurate information, and commit to a robust public outreach and education effort before delving too deeply into planning.

Enact a Robust Communications and Outreach Strategy

It is essential that utilities create and execute a comprehensive strategic communication, outreach, and involvement strategy to build credibility with the public and generate political will for the development of potable reuse projects. Planning should be informed by proactive and continuous communication with key parties—consumers, elected officials, regulators, advocacy organizations, media outlets, utility staff—before, during, and after project development. While education about the technology and proposed processes is important, outreach strategies need to offer authentic engagement and public involvement opportunities that go beyond messaging about the virtues of potable reuse and demonstrate responsiveness to the specific concerns and interests of local people and decision makers.¹⁹ It is critical to create opportunities for diverse points of view to be fully represented in project planning, including both project proponents and parties who have significant concerns.

Outreach to Build Legitimacy: Essential Ingredients for Success

- Strong reputation
- Trusted messengers
- Continuous outreach
- Connection with local interests and values
- Multiple channels
- Tailored approaches for different audiences
- Authentic engagement
- Genuine public involvement opportunities



Courtesy of Hampton Roads Sanitation District.

Utilities should embrace diverse stakeholder perspectives while aiming to build a coalition of partners and supporters across different sectors. It is important for projects to have trusted, vocal champions both from within the utility (e.g., a well-respected general manager) as well as externally (e.g., public health experts, environmental advocates, community leaders, elected officials). Utilities should keep stakeholders apprised as projects are constructed, tested, and approved by regulators, along with updates once projects are operational. Once a utility commits to a project, a demonstration phase may be critical to ensure that the treatment system performs properly in a technical sense. It also provides stakeholders with an opportunity to become familiar with the process. Arranging tours of a new facility can be an especially powerful way to introduce people to the technology and demystify the process.

As part of its Sustainable Water Initiative for Tomorrow (SWIFT), the centerpiece of which is a groundwater replenishment system that injects highly treated wastewater into a regional aquifer, the Hampton Roads Sanitation District (HRSD) in Virginia used a multifaceted public outreach approach.²⁰ HRSD conducted a stakeholder mapping exercise to identify key parties for outreach and made stakeholder engagement a priority throughout the planning process. The utility conducted a webinar series and high-level staff traveled throughout the service area. Leaders of the utility personally delivered briefings and listened to stakeholder questions and concerns. HRSD also proactively engaged political leaders and educated them, making a case for SWIFT as a solution to multiple local water challenges and using regional and national examples to highlight anticipated direct and ancillary benefits of the project. Based on the stakeholder engagement process, HRSD identified and incorporated several goals into its planning process.²¹ The HRSD experience illustrates the importance of being proactive and transparent, designing with co-benefits in mind as well as committing to a schedule and delivering dependably.

A robust communication and outreach strategy is critical enough that utilities considering a potable reuse project should also consider bringing on external communications expertise to support the effort. Among many benefits afforded by having expertise dedicated to managing communications and outreach, third-party support can be especially helpful in responding rapidly to (negative or positive) media coverage. This is particularly true for smaller utilities that might possess less in-house communications expertise or staff capacity to manage a multidimensional outreach strategy.

Engage External Experts

While an excellent reputation is essential to gaining consumer trust (i.e., moral legitimacy) in potable water reuse projects, a utility can further bolster its case by engaging external experts to provide review and oversight. Engaging a science-based independent advisory panel, such as those organized by NWRI to advise on the design and implementation of projects, is a useful step, particularly in places where there is substantial skepticism or opposition, or where experience with potable reuse is limited. Developed by NWRI to support the assessment and permitting of high-profile potable water reuse projects, the panels comprise leading water professionals, including academics, former regulators, and independent consultants who have considerable expertise in areas relevant to the project. To ensure the panel's independence and integrity, no panel members are associated with the project in a professional capacity. NWRI organizes and manages the panel on behalf of a sponsoring agency, with meetings held at or near the project location, allowing the panel to tour the sites and discuss operations with utility staff members. Each meeting results in a written report that provides findings and recommendations on the various technical, scientific, public outreach, and public health aspects of the project. The reports can be used to guide further studies and as background documents to inform elected officials, regulators, and the public.²²

The use of NWRI panels or a corollary is strongly recommended because it builds confidence among regulators, as well as community members and elected officials. Panels may also provide a means for periodic expert evaluations of operational projects. For example, the Singapore Public Utilities Board convenes annual meetings of its expert advisory panel to assure that the project undergoes a process of continuous improvement by incorporating knowledge from other locations and responding to changing conditions. Including this element will be particularly important in places where people are generally unfamiliar with potable reuse, but perhaps less intensive efforts are necessary in states like California, Texas, or Arizona that now boast well-established projects. As regulatory agencies and organizations of

operators who manage potable reuse become more familiar with the technology and its oversight, these organizations may be able to assume similar oversight responsibilities in the future as an alternative to convening and maintaining expert advisory panels.

Project Planning and Development

Utilities should plan and evaluate new water supply projects in the context of integrated water management. With respect to potable water reuse, utilities must be able to articulate a convincing argument as to why this specific option is the preferred alternative. The ability to make that case stems from careful and thorough planning conducted in parallel with the type of robust communications and outreach strategy described above. On both fronts, it is important for utility leaders to articulate the need for the project and to outline a clear pathway to implementation.

Establish Need, Purpose, and Benefits

Initial planning steps revolve around developing and communicating a clear sense of the need, purpose, and benefits of a proposed project. This helps to establish the pragmatic legitimacy of the project. Planners should assess the community needs that drive consideration of a project and articulate how a proposed project responds to those needs and how different stakeholders may be impacted. Utilities must demonstrate understanding of other water supply options and show how potable reuse compares in terms of capital and operations and management costs, impact on rates, and safety and reliability. The planning process should align with broader environmental priorities and examine the social, environmental, and economic benefits that justify investment. For instance, utilities can use scenario planning methods to illustrate how potable reuse could enhance the resilience of the water supply to long-term climate change such as more frequent or extended droughts. Sound planning processes should also be transparent about both potential risks and adverse impacts, and approaches to ensure public health protection (e.g., monitoring system, redundant treatment processes, alarms and shutdown triggers, performance testing, and independent review).

Recognize and Manage Constraints

Due to a lack of familiarity with potable water reuse systems, stakeholders may have novel questions (especially in states where it is just emerging) associated with issues such as discharge permits, source water control, and water rights. Therefore, planners need to understand the applicable governance structures that will influence development of a project including legal and regulatory constraints so that they can navigate them effectively. As noted, it is important for utilities to take an integrated water management approach and clearly understand the motivating drivers in the watershed as well as how projects fit into their water supply portfolio.



The Peter D. Binney Water Purification Facility, Aurora Water Prairie Waters Project. Courtesy of Aurora Water.

Utilities need to articulate why potable reuse is desirable as a water supply alternative. They also need to identify who is currently responsible for discharges, the current water quality of receiving waters and how a potable reuse project might impact it, and the downstream users. In western states where the most potable reuse projects have been developed to date, utilities must carefully consider water rights as they influence all levels of planning.

Identify Financing Options

Securing financing for potable reuse projects may be challenging because the practice may be new to finance planners and not clearly fit eligibility criteria of existing funding sources. While financing strategies must be tailored for specific projects and states, a utility can follow best practices to help successfully secure financing. Similar to creating a communications and outreach plan at the outset, utilities should develop a comprehensive financing plan upfront that looks beyond a single project and takes into consideration community interests and long-term capital improvement and asset management needs. Potable water reuse projects ought to be included in standard capital improvement planning (CIP) processes as most will require public financing. As with all proposed investments, utility managers must study the potential impact of a new reuse project on rates and be transparent with ratepayers about the findings. Another potentially wise step is to reach out to bond rating agencies and educate them about potable reuse with an eye toward managing perceived risk and minimizing potential impact on bond ratings.

Capital planners should also evaluate how alternative financing mechanisms might apply to potable water reuse projects. For example, it may be necessary to work with state revolving funds or managers of other traditional funding sources (e.g., local bond underwriters) or EPA's new Water Infrastructure Finance and Innovation Act (WIFIA) program managers to demonstrate how potable reuse projects meet eligibility or underwriting criteria and/or expand eligibility criteria to enable potable reuse funding. Planners may benefit from demonstrating how potable reuse projects generate public benefits beyond increased short-term drinking water supply, a factor that federal, state, or local funders should consider in determining whether to fund projects. As noted above, utilities should highlight benefits such as enhanced resilience to drought and a more sustainable supply to meet future demand, both of which could avert substantial costs over the long term. Finally, to support potable reuse projects, planners should be aware that it may be possible to take advantage of non-traditional funding and financing mechanisms that may not be used for conventional supply development. Examples include EPA's Clean Water State Revolving Fund and Drinking Water State Revolving Fund, the Bureau of Reclamation under the Title XVI Water Reclamation and Reuse program, and the WaterSMART funding program.

Creating an Enabling Policy Environment

A variety of policy developments facilitate the advancement of the potable water reuse enterprise to mainstream status. "Policy environment" is defined broadly here to encompass everything from the creation of binding federal statutes; to statements or guidance issued by regulatory agencies, professional associations, or expert bodies; to state and local policy; to research designed to inform policy or regulations.

Establish Regulatory Standards

Establishing criteria or regulatory standards specifically for potable water reuse that are protective of public health is a critical ingredient needed to mainstream the overall enterprise. Water professionals hold a range of views regarding the scope and scale at which potable water reuse criteria or regulations should be established—national, regional, state, and/or local—as well as how proscriptive they ought to be. Due to the absence of federal regulations on potable reuse, state drinking water primacy agencies have taken initiative and established regulatory and permitting approaches tailored to the rules, needs, and stakeholder interests in their respective states. State-by-state potable reuse implementation appears to provide many advantages and has encouraged innovation that has resulted in the development of safe and reliable projects. Generally, state regulators have shown the ability to work with utilities interested in potable reuse and have successfully permitted projects without undo delays. The different approaches used by states have created an innovative environment supported by academic research, industry research, and pilot and demonstrations facilities at utilities. For these projects, the state approaches used existing Safe Drinking Water Act (SDWA) and Clean Water Act (CWA) regulations as a foundation for the potable reuse projects.

Texas and California have developed the most robust criteria and regulatory/permitting approaches to date. In Texas, the Texas Commission on Environmental Quality (TCEQ) oversees all aspects of planning, permitting, and monitoring to protect the state's water resources. Faced with an urgent need for additional water supplies in parts of the state, TCEQ has approved direct potable reuse (DPR) projects on a case-by-case basis in accordance with the innovative/alternative treatment clause in the Texas Administrative Code addressing public drinking water that allows "any treatment process that does not have specific design requirements" to be considered for permitting.²³ Although this approach allows for flexibility for considering water projects, TCEQ requires that significant pilot testing be completed before a project can achieve final approval. The Colorado River Municipal Water District's Big Spring facility, the only currently operating municipal DPR facility in the U.S., was permitted under this approach and has been operational since 2013.

In California, the State Water Resources Control Board (State Water Board) took the approach of developing regulations for potable reuse. In 2014, the State Water Board's Division of Drinking finalized groundwater replenishment regulations, which were incorporated in the state's recycled water-related regulations. In 2017, draft Surface Water Augmentation regulations were released for public comments with final regulations expected in 2018.²⁴ California also intends on developing regulations for DPR. In 2016, an expert panel determined that it is feasible for the state to develop recycled water criteria for DPR. In October 2017, Assembly Bill 574 (AB 574) was signed into law and establishes a deadline of December 2023 for initial DPR regulations.²⁵

Other states, including Nevada, Colorado, Arizona, Washington, Oklahoma, and Florida, have also established or are exploring the development of potable water reuse regulations. While multiple states have successfully instituted regulatory schemes for potable reuse, some industry professionals see a need for federal regulations. Potential benefits of federal regulations include ensuring a minimum level of public health protection and perceived federal approval of the technologies and approaches. The creation of federal rules could also provide useful assistance to states and local utilities with less technical capacity that are considering potable reuse. However, state and local regulators may be opposed to federal oversight or perceive new federal regulations as undercutting existing state regulatory frameworks and undermining established local projects. It may be possible to address these concerns by establishing national guidance

that recommends potable reuse standards but allows individual states to determine workable regulatory approaches. It is also possible that national reuse guidance could be tailored to some degree to align with public perceptions of risk and varying levels of risk tolerance in different regions.

Develop Policy that Supports Mainstreaming Potable Water Reuse

With potable water reuse emerging in practice across the nation and a federal regulatory regime a distant (and possibly unnecessary) prospect, U.S. EPA can use other policy tools to help advance the enterprise in the near term. Several workshop participants indicated that EPA needs to articulate a clearer policy position supporting potable reuse and recognizing that it can be done safely. In January 2018, following the workshop, EPA released its *2017 Potable Reuse Compendium* (Compendium), which outlines key science, technical, and policy considerations for treating wastewater to drinking water standards.²⁶ The report supplements the 2012 EPA Guidelines by summarizing current practices and approaches in potable reuse, including the existing technical and policy knowledge base. The report presents the current state of practice in the U.S. to assist planners and decision makers considering potable reuse approaches. Importantly, the preface of the report includes policy statements from the EPA's Office of Ground Water and Drinking Water supportive of potable reuse. These statements include:

- *EPA supports water reuse as part of an integrated water resources management approach developed at the state and local level to meet the water needs of multiple sectors including agriculture, industry, drinking water, and ecosystem protection.*
- *EPA acknowledges the importance of potable water reuse and looks forward to working with our stakeholders as the practice continues to be developed and deployed as an important approach to ensure a clean, safe, and sustainable water supply for the nation.²⁷*

These assertions are the clearest statements to date by EPA in support of the use and safety of potable reuse as a viable and needed approach for augmenting the nation's potable water supplies in all regions of the country. These statements from the federal level provide local utilities greater confidence to consider and pursue potable water reuse projects, and state agencies a stronger foundation to develop appropriate regulations.

Based on the Compendium, EPA could develop additional guidance for state primacy agencies and/or utilities that could range in specificity from a general description of the essential components of a potable reuse regulatory framework to a specific set of potable reuse system engineering, operational, and performance elements.

If formal regulations are not developed on a federal level, non-regulatory federal actions such as guidance could help shape public perception and bolster state and local efforts to ensure the safety of specific potable water reuse projects, as well as build the legitimacy of the overall enterprise.

"EPA supports water reuse as part of an integrated water resources management approach developed at the state and local level to meet the water needs of multiple sectors including agriculture, industry, drinking water, and ecosystem protection."

– **Peter Grevatt**, Director, U.S. EPA Office of Groundwater and Drinking Water

Create Supportive Mechanisms at State and Local Levels

As more communities across the nation stand to benefit from potable water reuse and consider projects, a variety of steps can help lay the groundwork for successful implementation. Utilities, supporters, and advocates who believe potable reuse could be a useful and appropriate option should raise awareness about the current state of practice in state-wide or local water planning processes. Incorporation of supportive language into official planning documents creates a useful platform for advancing other elements necessary for leveling the playing field for potable reuse. For example, because of concerted outreach and education efforts, Colorado's first state water plan²⁸ includes a section on potable water reuse, which is enabling progress on the development of state-level regulations. At the regional and local level, watershed-based integrated resource management can help foster collaboration and integration among drinking water and wastewater utilities, which is an essential ingredient for long-term success. Business groups and nongovernmental and research organizations can effectively complement these efforts by incorporating statements supportive of potable reuse in their policies, publications, and outreach materials.

States that establish policy encouraging potable reuse need to allocate staff resources and/or funding to support the development of regulations and the permitting of projects. In California, the State Water Board developed regulations for groundwater replenishment and surface water augmentations and has convened two independent groups, an expert panel of scientists and engineers²⁹ and an advisory group of stakeholders³⁰ to provide advice on issues related to the investigation of the feasibility of developing uniform water recycling criteria for direct potable reuse. The recommendations of the independent bodies established the foundation for the development of regulations by the State Water Board. These steps led to the passage of AB 574, establishing regulatory certainty for California communities that want to pursue direct potable reuse.³¹

In other states, the water community has engaged state agencies in implementing or considering potable reuse regulations. In Nevada, regulations for groundwater recharge were developed by the state in 2016 in response to interest by utilities in pursuing potable reuse projects. In Arizona, in response to increased interest by utilities in DPR, the Arizona Department of Environmental Quality made amendments to the state's reclaimed water rules (effective January 1, 2018) based on listening sessions to gather stakeholder input from across the state. In Colorado and Florida, state reuse organizations (WaterReuse Colorado and WaterReuse Florida) have instituted stakeholder-driven processes to develop recommendations for developing state-wide potable reuse regulations.

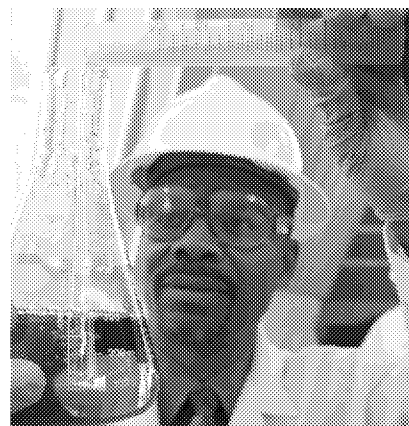
State drinking water and clean water revolving funds, local bonds, and other existing mechanisms offer opportunities to support the development of potable reuse projects. EPA's WIFIA loan guarantee program similarly can assist financing of potable reuse projects.³² In California, several projects were developed with grants and loans under various propositions establishing General Obligation bond financing authority. For example, in 2014, voters approved the Water Quality, Supply, and Infrastructure Improvement Act (Proposition 1), which provided over \$7 billion for California's water needs, including \$625 million for recycled water projects.³³ In Texas, potable reuse projects are eligible for low-interest loans through the State Water Implementation Fund for Texas (SWIFT).³⁴

In the water sector generally, there is a need to reform the policies of different funding agencies to allow or encourage the aggregation of funds among multiple utilities to develop potable reuse (and other water) projects that optimize environmental, social, and economic outcomes to local water challenges. It will also

be important to streamline and align the processes for seeking funding from multiple funding sources which currently have different schedules, application requirements, and eligibility criteria.

Set a National Research Agenda Aimed at Institutional Challenges

Research on institutional aspects of implementing potable reuse projects is needed to further inform the development of policy and regulations, strengthen professional practice, and propel the enterprise toward the mainstream at all scales. The National Academies of Science, Engineering, and Medicine, Water Research Foundation (WRF), and EPA are all key entities positioned to lead this work. The National Academies may be the most appropriate multistakeholder expert body to set a national research agenda to examine institutional challenges to potable reuse. WRF continues to fund a range of relevant research and could also contribute to agenda-setting as well as funding needed research, as could EPA. For instance, WRF received a \$4.5 million grant in 2017 from the State Water Board that will be leveraged through utilities in California and across the nation to further advance the science and acceptance of potable reuse. Additionally, federal, state, and local agencies and other organizations supporting potable reuse may need to cooperate to secure funding to support research by the National Academies and other research organizations. Organizations like the Western Governors' Association and other nongovernmental organizations could also play important roles in advancing a focused research agenda. The following topics could form an initial basis for a national research agenda aimed at overcoming outstanding institutional challenges facing potable water reuse projects:



Source: Shutterstock

- **Existing regulatory approaches:** catalogue and publish a compendium capturing the range of existing state regulatory approaches to potable water reuse and their scientific bases;
- **Governance:** document and classify different approaches to overcoming governance fragmentation among drinking water and wastewater utilities such as consolidation, joint-partnership agreements, or virtual partnerships;
- **Water rights:** compile information about how water rights law helps or hinders potable reuse in different states;
- **Incentives:** explore the advantages and disadvantages of creating incentives for potable reuse projects, including an examination of the California and Texas experiences;
- **Unplanned reuse:** examine whether unplanned reuse (the practice of drawing drinking water supply from sources containing a significant amount of treated wastewater discharged upstream) poses public health risks and characterize the steps that should be taken to ensure such systems provide the same protection expected of planned potable water reuse enterprises (broadly defined);
- **Facility operations:** develop advanced water treatment certifications and training for potable reuse system operators based on existing drinking water and wastewater operator certification models;
- **Mainstreaming:** explore the meaning of mainstreaming and characterize the potential benefits and downsides associated with it for potable reuse; and
- **Success stories:** develop case studies of successful potable water reuse projects, detailing lessons learned about effective communications and outreach strategies, financing approaches, and overcoming other implementation challenges.

Conclusion: Recommendations for the Path Forward

Technological advances combined with changing environmental and demographic conditions have increased interest in potable water reuse as a drinking water source over the past two decades. When integrated carefully into a “one water” approach to water resource management,³⁵ potable reuse can be a smart, long-term water supply option that generates multiple benefits including drought resilience and sustainable drinking water for growing populations. The enterprise is on a promising trajectory that is clearly accelerating, but additional effort is needed to put potable water reuse on par with traditional drinking water sources.

In review, utility leaders and other proponents of potable water reuse are encouraged to explore and implement the following key strategies to advance individual projects and accelerate the mainstreaming of potable water reuse more broadly:

- Assess the utility’s reputation among customers and decision makers before investing in project planning;
- Create and execute a comprehensive strategic communication, outreach, and involvement strategy to build trust and credibility (and consider enlisting the assistance of a communications consultant);
- Use an external expert body to advise on the design and implementation, and support monitoring and evaluation of projects (especially in places where potable water reuse is still perceived as a novel practice);
- Assess the community needs driving consideration of a project, articulate how a project responds to those needs, and how different stakeholders may be impacted;
- Take an integrated water management approach, understand the motivating drivers, and be prepared to navigate applicable governance structures that will influence development of a project;
- Develop a comprehensive financing plan that considers community interests, long-term capital improvement and asset management needs, as well as alternative financing mechanisms;
- Work actively with state primacy agencies to establish workable regulatory approaches that are protective of public health;
- Introduce potable water reuse as a potential water supply option early in state-wide or local water planning processes;
- Foster collaboration and integration among drinking water and wastewater utilities through watershed-based integrated resource management processes;
- Advocate for adequate state funding for the development of potable water reuse regulations;
- Support development of guidance documents and mechanisms to share examples of successful approaches to addressing the needs listed above; and
- Support a national research agenda to examine institutional challenges to potable water reuse.

Participants in the October 2017 workshop identified additional practical next steps to advance the legitimization and uptake of potable water reuse in the United States. First, **establish common, widely accepted definitions** of different types of potable water reuse that can be adopted and used consistently across the nation for the development of regulations and policy. The definitions outlined in California's AB 574 represent a useful starting point (see text box). Additionally, it is helpful to link the accepted definitions with easily understood educational materials depicting how reuse fits into the water use cycle for communication and outreach purposes.³⁶

The water sector also needs to **build an enterprise-scale innovation ecosystem** spanning the drinking water and wastewater sectors as well as a range of disciplines. Existing local champions and regional experts must be identified and connected with other water professionals to share knowledge, provide mentoring, and build capacity around technical, planning, communications, regulatory, and operational dimensions of the practice. This effort will require a dedicated convenor and could occur through a variety of channels including a focused workshop series, virtual platforms, and/or professional conferences.

The vision expressed at the workshop is to eventually develop a national roster of credible experts upon whom a utility in any region could call to review, validate, and help monitor potable reuse projects. Such a system would serve a similar purpose to current NWRI panels in terms of lending credibility and ensuring proper systems and safeguards are instituted but would be easier for utilities of all sizes and capacity levels to access. In the short term, the ingredients for success presented in this report can help individual utilities and states move projects forward. Over the longer term, leaders in the field need to continue developing and sharing institutional capacity and the skills necessary to build a national-scale innovation ecosystem to more rapidly legitimize potable water reuse as a mainstream drinking water source in the United States.

California Assembly Bill (AB) 574 Definitions

Direct potable reuse is the planned introduction of recycled water either directly into a public water system...or into a raw water supply immediately upstream of a water treatment plant. Direct potable reuse includes, but is not limited to, the following:

- **Raw water augmentation:** the planned placement of recycled water into a system of pipelines or aqueducts that deliver raw water to a drinking water treatment plant that provides water to a public water system.
- **Treated drinking water augmentation:** the planned placement of recycled water into the water distribution system of a public water system.
- **Indirect potable reuse for groundwater recharge:** the planned use of recycled water for replenishment of a groundwater basin or an aquifer that has been designated as a source of water supply for a public water system.
- **Reservoir water augmentation:** the planned placement of recycled water into a raw surface water reservoir used as a source of domestic drinking water supply for a public water system...or into a constructed system conveying water to such a reservoir.³⁷

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End Notes

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End Notes (cont.)

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“EPA acknowledges the importance of potable water reuse and looks forward to working with our stakeholders as the practice continues to be developed and deployed as an important approach to ensure a clean, safe, and sustainable water supply for the nation.”

– 2017 Potable Reuse Compendium



Meridian Institute
Connecting People to Solen Problems



Report prepared by Meridian Institute and Paradigm Environmental.

Graphic design by Weirdesign.

Copy editing by Full Circle Communications.

Message

From: Peter Colohan - NOAA Federal [peter.colohan@noaa.gov]
Sent: 4/19/2018 5:53:59 PM
To: Julie Minton [jminton@waterrf.org]
CC: Bart Weiss [weisst@hillsboroughcounty.org]; Grevatt, Peter [Grevatt.Peter@epa.gov]; Rob Renner [rrenner@waterrf.org]; Wadlington, Christina [Wadlington.Christina@epa.gov]; Kelsey Beveridge [kbeveridge@waterrf.org]; Courtney Tharpe [CTharpe@waterrf.org]
Subject: Re: WRF Research Conference Opening Session on May 7th in Atlanta

Actually, sorry! One more tweak: *NOAA – Climate impacts and future integrated water prediction capabilities for resiliency.*

On Thu, Apr 19, 2018 at 1:50 PM, Peter Colohan - NOAA Federal <peter.colohan@noaa.gov> wrote:
Hi Julie, this looks good. Can I change the title of my talk? I should be able to arrive on Sunday, May 6 for the reception. --Peter

NOAA – Climate impacts and future water prediction capabilities for resiliency

On Tue, Apr 17, 2018 at 7:38 AM, Julie Minton <jminton@waterrf.org> wrote:

Dear Peter, Peter and Bart,

Thank you all so much for agreeing to be part of the opening session at the WRF Research Conference! We are looking forward to seeing you on the morning of Monday, May 7th in downtown Atlanta. Here is the lineup of speakers for the morning:

Opening Session - Monday May 7th 8:30 - 10am

Facilitator – Rob Renner, CEO WRF

8:30am Welcome/introductions – Rob Renner

8:45am About the new WRF – WRF Board member Bart Weiss

9:00am Peter Grevatt, EPA – EPA priorities and water trends, Recent Release of Potable Reuse Compendium

9:20/25am - 5-10 min Q&A

9:30am Peter Colohan, NOAA – Climate impacts and need for future water management and resiliency

9:50/55am - 5-10 min Q&A

Questions/Requests:

- Does this all sound ok? Please let me know if you need more (or less) time, and feel free to adjust the scope of your talk.
- Please confirm if you will have powerpoint slides. We will have a podium/laptop so slides are welcome.
- Please let me know when you will arrive in Atlanta. If possible, it would be nice to all meet on Sunday evening at the Welcome Reception (5:30-6:30pm).
- On Monday morning, please plan pick up your registration folder/name badge by 8am and meet in the ballroom by 8:15 (registration and breakfast starts at 7:30am)
- One of our communications team members, Kelsey Beveridge, is working on producing content about the conference for World Water: Reuse & Desalination Magazine, and would like to feature highlights from your keynote addresses in an interview format. Kelsey is cc'ed here and will follow up with more details.

Please let us know if you have any questions at all! We thank you again for being a part of the opening session to kick off this great event, and look forward to hearing back from you on the above questions.

Best regards,

Julie

Julie Minton

Director of Strategic Initiatives

The Water Research Foundation

jminton@waterrf.org



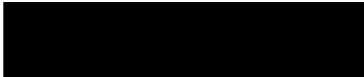
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Message

From: Julie Minton [jminton@werf.org]
Sent: 2/16/2018 3:40:54 PM
To: Grevatt, Peter [Grevatt.Peter@epa.gov]
CC: John Albert [jalbert@waterrf.org]; Tiago, Joseph [Tiago.Joseph@epa.gov]; Albert, Ryan [Albert.Ryan@epa.gov]; Wadlington, Christina [Wadlington.Christina@epa.gov]; Mason, Paula [Mason.Paula@epa.gov]; Melissa Meeker [mmeeker@werf.org]
Subject: RE: Water Research Foundation: Research Conference

Perfect, thank you Peter! We do have sessions and a welcome reception on Sunday, please join us for whatever portion you are able.
Have a great Friday and weekend.

Thank you!

Julie

From: Grevatt, Peter <Grevatt.Peter@epa.gov>
Sent: Friday, February 16, 2018 10:19:05 AM
To: Julie Minton
Cc: John Albert; Tiago, Joseph; Albert, Ryan; Wadlington, Christina; Mason, Paula
Subject: RE: Water Research Foundation: Research Conference

Thanks for your kind words Julie. I'm very pleased to have the opportunity present at the opening on Monday. I will plan to travel down on Sunday and will likely have to return to DC on Monday afternoon, so this time slot should work well.

P. Grevatt

From: Julie Minton [mailto:jminton@werf.org]
Sent: Friday, February 16, 2018 9:20 AM
To: Grevatt, Peter <Grevatt.Peter@epa.gov>
Cc: John Albert <jalbert@waterrf.org>
Subject: RE: Water Research Foundation: Research Conference

Dear Peter,

Thank you for your talk in Denver this week, I was tuned in from home and it was excellent!

We would love to have you as a keynote speaker during the opening session on the morning of Monday May 7. The program to date is attached – you'll notice opening session is still pending info. We are hoping to have you and possibly one other keynote (in the works), along with the Chairs of the WRF Board. Based on the final lineup of speakers, I'll send an intro email in the upcoming month to introduce you all and provide allotted times. Additional conference info is here [2018 Research Conference](#).

Last week I was in touch about this with one of your staff, who is also checking your schedule so don't be surprised if you hear from them too!

Please let me know if you have any questions.

Best,

Julie

Julie Minton | Director of Strategic Initiatives

The Water Research Foundation

1199 N. Fairfax St., Suite 900, Alexandria, VA 22314

www.werf.org

Register now for our 2018 Research Conference!



From: John Albert [<mailto:jalbert@waterrf.org>]
Sent: Thursday, February 15, 2018 3:33 PM
To: Julie Minton <jminton@werf.org>
Subject: Fwd: Water Research Foundation: Research Conference

Can you help answer Peter's question?

Sent from my iPhone

Begin forwarded message:

From: "Grevatt, Peter" <Grevatt.Peter@epa.gov>
Date: February 15, 2018 at 1:21:51 PM MST
To: John Albert <jalbert@waterrf.org>
Subject: RE: Water Research Foundation: Research Conference

Thanks John. It was great to have to opportunity to visit with the excellent staff and management team at TWRF yesterday!

Thanks for your kind invitation below. It would be helpful if you could give me a sense of whether you would be looking for me to do one of the two plenary talks or whether you are looking for this to be presented in one of your breakout sessions. If it is the former, I would want to present on the compendium but also expand the topic to address several of the issues you have listed below. If it is the latter, I would be glad to see whether we could have one of my staff travel down to participate in that session.

Thanks, P.G.

From: John Albert [<mailto:jalbert@waterrf.org>]
Sent: Wednesday, February 14, 2018 3:26 PM
To: Grevatt, Peter <Grevatt.Peter@epa.gov>
Subject: Water Research Foundation: Research Conference

Peter,

Thank you again for coming out and interacting with Foundation folks. I have received so many positive responses from our group about your talk and following discussion. I hope it was equally valuable to you as well.

I wanted to discuss our upcoming research Conference with you and see if you would be available to give a talk about the newly released Potable Reuse Compendium.

Thank you again for coming out it MUCH appreciated!

John

2018 Water Research Foundation Conference

Advancing Reuse & Integrated Water

The latest research addressing the challenges of integrated water management and reuse will be presented at the 2018 Water Research Foundation Conference (a continuation of the 20-year tradition of the former WaterReuse Research Foundation) in downtown Atlanta, GA on May 6-8, 2018. The Research Conference is designed to help communities prepare for the future with a comprehensive program offering innovative approaches and creative solutions for managing our water resources.

This conference is where water professionals and researchers meet to network, exchange ideas, and envision the future. The program will include two keynote sessions, plenary/panel discussions, multiple tracks of sessions, poster presentations, and technical tours.

Water Reuse Topics

- Indirect potable reuse (groundwater and surface water augmentation)
- Direct potable reuse
- Industrial reuse
- Produced water (from oil and gas extraction)
- Agricultural reuse
- Source control for potable reuse
- Water quality: Microbiologicals and pathogens
- Water quality: Constituents of emerging concern (unregulated chemicals, trace organic chemicals, pharmaceuticals and personal care products, etc.)
- Monitoring (online, water quality, treatment performance, etc.)
- Next generation monitoring options for chemicals and microbiologicals
- Treatment technologies and treatment systems
- Treatment performance and reliability
- Concentrate management and treatment
- Operations, operator training, and operator certification
- Planning and case studies
- Economic assessments of reuse
- Public engagement, education, and outreach
- Regulations and guidance

Integrated Water Topics

- Integrated water (One Water) management
- Tools and management practices
- Collaboration across sectors (land use planning, transportation, energy, agriculture, forestry)
- Watershed management
- Stormwater management
- Innovative technologies and approaches
- Modeling tools and decision support systems

- Green infrastructure
- Low Impact Development (LID)
- Decentralized systems and onsite treatment systems
- Stream restoration as part of integrate water
- Linking management practices to receiving water impacts
- Planning and case studies
- Implementation and best practices
- Institutional considerations
- Partnerships and stakeholder participation
- Flexible and adaptable urban water systems
- Climate resiliency and addressing uncertainty
- Economic tools and assessing benefits and co-benefits
- Food-Energy-Water nexus

Who Should Attend

- Academics
- Consultants
- Engineers
- Government Officials
- Planners
- Scientists
- Water and Wastewater Utility Officials
- Water Agency Managers

From: Grevatt, Peter [<mailto:Grevatt.Peter@epa.gov>]
Sent: Thursday, January 11, 2018 8:44 AM
Subject: Release of EPA's 2017 Potable Reuse Compendium

Dear colleagues,

Today, EPA is announcing the release of the *2017 Potable Reuse Compendium*. This document supplements the *2012 Guidelines for Water Reuse* and provides a current look at potable water reuse practices, including direct potable reuse. The compendium was developed in partnership with CDM Smith and with input from state and industry partners, including WE&RF, WRF, AWWA, ASDWA, Texas, California, and Colorado. The compendium addresses multiple topics, including the extent of potable water reuse in the United States, current treatment technologies, and costs of potable water reuse. Additionally, it includes seven U.S. case studies that illustrate indirect and direct potable reuse approaches.

I greatly appreciate the review and input you and others in your organization have provided in the development of the document.

After 1pm today, the document will be available on www.epa.gov/safewater. If you have additional questions or need more information, please feel free to contact me or Ryan Albert of my staff at (202) 564-0763 or albert.ryan@epa.

Message

From: Grevatt, Peter [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=D3CAA0C39EBE44CB9D3AE44DA7543733-GREVATT, PETER]
Sent: 12/12/2018 4:53:48 PM
To: Michael Deane [mdeanedc@gmail.com]
Subject: RE: WRF Congratulations!

Thanks for your very kind message Michael! I look forward to working with you in the new year!

From: Michael Deane <mdeanedc@gmail.com>
Sent: Monday, December 10, 2018 2:53 PM
To: Grevatt, Peter <Grevatt.Peter@epa.gov>
Subject: WRF Congratulations!

I finally can properly and officially congratulate you, Peter! So, congratulations!! I was getting eager to do so following your retirement celebration at EPA last week. It was wonderful to see you there to thank you for your great service so far and now express excitement for your next adventure. I have been teasing Rob for a year that no one can fill his shoes – but I was wrong. You are an excellent – perfect – selection and I hope to be in position to work with you in some capacity going forward. Meanwhile, as you mentioned at your party, I am happy to sit down and discuss with you whenever you like NGO/association management issues, including “Fun with Boards of Directors”! You have this email address and my cell number is ([REDACTED])

With sincere personal regards,

Michael

Message

From: Grevatt, Peter [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=D3CAA0C39EBE44CB9D3AE44DA7543733-GREVATT, PETER]
Sent: 5/2/2018 10:21:15 PM
To: Albert, Ryan [Albert.Ryan@epa.gov]
CC: Tiago, Joseph [Tiago.Joseph@epa.gov]
Subject: RE: WRF Research Conference: Sunday dinner in Atlanta - Invitation

Thx. Already booked for dinner with panel for Monday morning. Thanks for the invite!

From: Albert, Ryan
Sent: Wednesday, May 02, 2018 6:16 PM
To: Grevatt, Peter <Grevatt.Peter@epa.gov>
Subject: FW: WRF Research Conference: Sunday dinner in Atlanta - Invitation

Any interest in joining? I'll see if Lauren is interested too if her flight allows.

I am going to reach out to Chris Impellitteri (ORD) as well about if he is free Monday night. Chris has been universally helpful on a myriad of projects, and is simply nice to catch up with.

Best regards,
Ryan

Ryan Albert, Ph.D.
Acting Chief, Standards and Risk Reduction Branch
Standards and Risk Management Division
Office of Ground Water and Drinking Water
U.S. Environmental Protection Agency
Washington, DC
(202) 564-0763

From: Jeffrey Mosher [mailto:jmosher@carollo.com]
Sent: Wednesday, May 02, 2018 12:29 PM
To: Albert, Ryan <Albert.Ryan@epa.gov>
Subject: WRF Research Conference: Sunday dinner in Atlanta - Invitation

Hi Ryan,

I see that you will be at the WRF Research Conference in Atlanta. Carollo is getting a group together on Sunday night (May 6).

We will be going to "Der Biergarten" about ½ mile from the conference: <https://derbiergarten.com/>


We will head over after the reception, so around 7 pm.

Let me know if you can join us and please feel free to bring a guest.

Looking forward to seeing you in Atlanta!

Jeff

Jeff Mosher
Carollo Engineers, Inc.
707 Wilshire Blvd, Suite 3920
Los Angeles, CA 90017


jmosher@carollo.com
www.carollo.com

Message

From: Grevatt, Peter [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=D3CAA0C39EBE44CB9D3AE44DA7543733-GREVATT, PETER]
Sent: 12/12/2018 4:03:09 PM
To: pgrevatt@gmail.com
Subject: FW: WRF

-----Original Message-----

From: Bill Teichmiller <teich4@ejwatercoop.com>
Sent: Wednesday, December 12, 2018 10:30 AM
To: Grevatt, Peter <Grevatt.Peter@epa.gov>
Subject: WRF

Peter - congrats on your new assignment. Your going to do great things in your new role and look forward to working w you.

When you get your new e address, let me know so I can update my file.

Happy Holidays to Heather and yourself.

Best, Bill

Sent from my iPhone

Message

From: Grevatt, Peter [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=D3CAA0C39EBE44CB9D3AE44DA7543733-GREVATT, PETER]
Sent: 12/12/2018 4:03:01 PM
To: Bill Teichmiller [teich4@ejwatercoop.com]
Subject: RE: WRF

Thanks Bill, will do and same best wishes to you and your family!

-----Original Message-----

From: Bill Teichmiller <teich4@ejwatercoop.com>
Sent: Wednesday, December 12, 2018 10:30 AM
To: Grevatt, Peter <Grevatt.Peter@epa.gov>
Subject: WRF

Peter - congrats on your new assignment. Your going to do great things in your new role and look forward to working w you.

When you get your new e address, let me know so I can update my file.

Happy Holidays to Heather and yourself.

Best, Bill

Sent from my iPhone

Message

From: Grevatt, Peter [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=D3CAA0C39EBE44CB9D3AE44DA7543733-GREVATT, PETER]
Sent: 5/9/2018 11:18:35 AM
To: Wadlington, Christina [Wadlington.Christina@epa.gov]
CC: Mclain, Jennifer [Mclain.Jennifer@epa.gov]
Subject: RE: PFAS National Leadership Summit

Did you reach out to Claudio or should I do so? I want to make sure we close the loop today. Thanks.

From: Grevatt, Peter
Sent: Monday, May 07, 2018 3:05 PM
To: Wadlington, Christina <Wadlington.Christina@epa.gov>
Cc: Mclain, Jennifer <Mclain.Jennifer@epa.gov>
Subject: Re: PFAS National Leadership Summit

If we can fit one for WEF we should do so. Sorry I did not catch this sooner!

Sent from my iPhone

On May 7, 2018, at 2:32 PM, Wadlington, Christina <Wadlington.Christina@epa.gov> wrote:

We did not. We invited AWCA and NACWA to represent the clean water interests. We also have the Water Quality Association and the Water Research Foundation.

From: Grevatt, Peter
Sent: Monday, May 07, 2018 2:09 PM
To: Wadlington, Christina <Wadlington.Christina@epa.gov>
Cc: Mclain, Jennifer <Mclain.Jennifer@epa.gov>
Subject: Fwd: PFAS National Leadership Summit

Please advise on status. Did we not invite them?

Sent from my iPhone

Begin forwarded message:

From: Claudio Ternieden <cternieden@wef.org>
Date: May 7, 2018 at 2:04:54 PM EDT
To: "Grevatt.Peter@epa.gov" <Grevatt.Peter@epa.gov>
Subject: PFAS National Leadership Summit


Hi Peter,
I wanted to follow up on the PFAS National Leadership Summit and see whether WEF could have a seat at that meeting – we feel we should be there given our membership is engaged in this issue as you know.

I've seen the agenda as it is now and seems that we should be there. Please advise on steps we need to take and I thank you in advance for your consideration!

Best regards,
Claudio

Ps: I promise to behave! 😊

Claudio H. Ternieden
Senior Director,
Government Affairs and Strategic Partnerships
WATER ENVIRONMENT FEDERATION
601 Wythe Street
Alexandria, VA 22314


cternieden@wef.org
www.wef.org

Message

From: Grevatt, Peter [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=D3CAA0C39EBE44CB9D3AE44DA7543733-GREVATT, PETER]
Sent: 3/9/2018 12:18:18 AM
To: Peter Grevatt [pgrevatt@gmail.com]
Subject: Fwd: The Water Research Foundation Integration Update

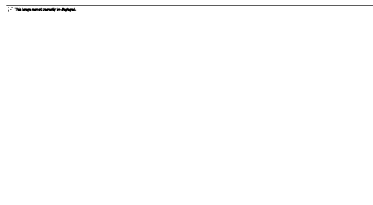
Sent from my iPhone

Begin forwarded message:

From: The Water Research Foundation <kbeveridge@waterrf.org>
Date: March 7, 2018 at 2:00:34 PM EST
To: <grevatt.peter@epa.gov>
Subject: The Water Research Foundation Integration Update
Reply-To: <kbeveridge@waterrf.org>

Mailing Preheader Content

[View this mailing online](#)



News Splash

March 7, 2018

Since October 2017, when the Boards of the Water Research Foundation and the Water Environment & Reuse Foundation voted to integrate the two organizations into one superior research foundation, great strides have been made in bringing the two operations together. Much of this success has been the result of having both CEOs working together cooperatively to implement the merger with progress made toward full integration of our Denver and Alexandria operations.

With the integration well under way, the Board of Directors has begun to focus on our long-term future. We recognize that the ultimate success of the merged organization is largely dependent on a strong CEO to lead the Foundation in 2019 and beyond.

After reflection on the best interests of the Foundation and recognition that the remaining transition issues can be managed efficiently with a single CEO, Melissa Meeker has decided to move on to other opportunities, effective at the end of April.

The Board is grateful for Melissa's leadership and commitment to making the integration of these two great Foundations a reality. Her leadership during the negotiations and merger process has been key to our success to date. We expect to keep in touch with Melissa as a key player in the water community and we all wish Melissa great success in her next endeavor.

We are most fortunate to maintain the accomplished leadership of Rob Renner who will continue as CEO through the remaining transition period. We owe Rob our sincerest gratitude for his leadership in making the merger happen and his selfless commitment to the long-term success of the integrated Foundation. The Board has every confidence in Mr. Renner's proven leadership, commitment and expertise as the advantages of the merger are realized and solidified.

After much consideration and discussion, the Board has decided to begin the process of recruiting our next CEO to lead a unified Foundation forward in 2019 and beyond. We are hopeful our search will be complete by late 2018 or early 2019. We are confident that we will find the right leadership to fully realize the potential benefits of the newly merged Foundation in 2019 and beyond.

We remain excited about The Water Research Foundation's future. Thanks to our terrific staff and to our subscribers for their continued support and volunteerism as we advance the study of One Water.

Sincerely,

Charles M. Murray
Fairfax Water
WRF Co-Chairman
cmurray@fairfaxwater.org

Kevin L. Shafer
Metro Milwaukee Sewerage District
WRF Co-Chairman
kshafer@mmsd.com

The Water Research Foundation
1199 N. Fairfax St, Suite 900
Alexandria, VA 22314-1445



(571) 284-2100

Unsubscribe

You received this email because you have a relationship with The Water Research Foundation.



Message

From: Grevatt, Peter [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=D3CAA0C39EBE44CB9D3AE44DA7543733-GREVATT, PETER]
Sent: 5/8/2018 11:11:03 AM
To: David Sedlak [sedlak@berkeley.edu]; Henifin, Ted [EHenifin@hrsdc.com]
Subject: RE: [SPAM-Sender] Re: Draft slides for WRF meeting

Thanks. Happy to handle this either way. I'll have a number of points I'll want to make on that slide and the one following. I'm looking forward to this morning's discussion. We have a lot of time so it should be robust!

From: David Sedlak [mailto:sedlak@berkeley.edu]
Sent: Tuesday, May 08, 2018 7:06 AM
To: Henifin, Ted <EHenifin@hrsdc.com>
Cc: Grevatt, Peter <Grevatt.Peter@epa.gov>
Subject: [SPAM-Sender] Re: Draft slides for WRF meeting

I'll stick around the podium and do the transition to Peter.

David

On May 7, 2018, at 7:26 AM, Henifin, Ted <EHenifin@hrsdc.com> wrote:

David,

This looks great. I am prepared to step in at Slide 13 and highlight the SWIFT experience in building legitimacy (even if we did not realize that is what we were doing). I noticed you have Peter stepping in at Slide 15. Do you want him to cover Slide 14 or will you come back to the podium to introduce that concept?

See you in the morning.

Ted

From: David Sedlak [mailto:sedlak@berkeley.edu]
Sent: Saturday, May 05, 2018 6:49 PM
To: Henifin, Ted
Subject: Draft slides for WRF meeting

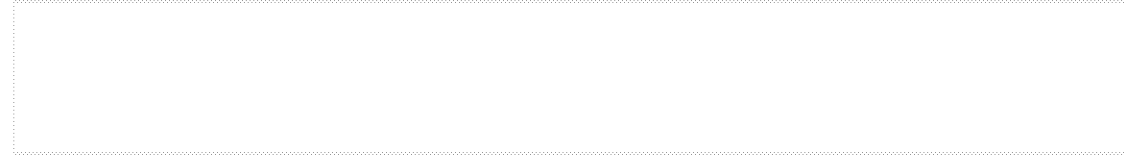
Ted:

Just in case you didn't get my e-mail with the draft presentation, I posted it on google drive. You should have recieved an invitation.

David

Begin forwarded message:

From: Mail Delivery Subsystem <mailer-daemon@googlemail.com>
Subject: Delivery Status Notification (Failure)
Date: May 5, 2018 at 3:37:52 PM PDT
To: sedlak@berkeley.edu



<image001.png>

Recipient inbox full

Your message couldn't be delivered to EHenifin@hrsd.com. Their inbox is full, or it's getting too much mail right now.

The response was:
552 size limit exceeded

Reporting-MTA: dns; googlemail.com
Received-From-MTA: dns; sedlak@berkeley.edu
Arrival-Date: Sat, 05 May 2018 15:37:42 -0700 (PDT)
X-Original-Message-ID: <E91F123B-E4D5-48A6-BB57-AD396261D548@berkeley.edu>

Final-Recipient: rfc822; EHenifin@hrsd.com
Action: failed
Status: 5.0.0
Remote-MTA: dns; esa.hrsd.com. (63.66.69.106, the server for the domain hrsd.com.)
Diagnostic-Code: smtp; 552 size limit exceeded
Last-Attempt-Date: Sat, 05 May 2018 15:37:52 -0700 (PDT)

From: David Sedlak <sedlak@berkeley.edu>
Subject: **Draft slides and approach**
Date: May 5, 2018 at 3:35:37 PM PDT
To: "Henifin, Ted" <EHenifin@hrsd.com>, "Grevatt, Peter" <Grevatt.Peter@epa.gov>
Cc: "Smith, DavidW" <Smith.DavidW@epa.gov>

Peter and Ted:

As promised, here is a draft of my slides with notes and talking points on the bottom.

My plan is to ask Ted to step up at slide 13 and expand in the issues related to the ways in which utilities build legitimacy and get financing and permitting resolved early on in the project development process. Hopefully, he can also share some thoughts on how we as a community

can help others learn from SWIFT and advance other, similar projects.

At slide 15, Peter can come on and talk about the innovation ecosystem, with specific emphasis to the ways in which EPA can help foster the innovation ecosystem through collaboration with the states and local communities.

I'm not sure if I should have a slide with some ideas about next steps after slide 17. I will definitely give some thought to conversation starters and suggestions to get the discussion going.

Your comments and suggestions for improvement would be appreciated.

David

Message

From: Grevatt, Peter [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=D3CAA0C39EBE44CB9D3AE44DA7543733-GREVATT, PETER]
Sent: 12/11/2018 7:12:53 PM
To: Becker, William [wbecker@hazenandsawyer.com]
Subject: RE: WRF

Thanks for your kind message Bill. I will very much look forward to working with you and your H&S colleagues in the new year!

From: Becker, William <wbecker@hazenandsawyer.com>
Sent: Tuesday, December 11, 2018 11:26 AM
To: Grevatt, Peter <Grevatt.Peter@epa.gov>
Subject: WRF

Hi Peter –

I just wanted to say congratulations on your retirement from EPA and on becoming the next CEO for WRF!!! I was quite concerned with the merger about the direction and integrity of the foundation after Rob steps down, but am extremely pleased to see that the board made such an excellent choice for his replacement!!!

Congratulations again and best wishes in your new role!

Bill

William C. Becker, PhD, PE, BCEE

Vice President | Hazen and Sawyer
Corporate Drinking Water Practice Leader
143 Union Boulevard, Suite 220, Lakewood, CO 80228
[REDACTED]
wbecker@hazenandsawyer.com | hazenandsawyer.com

Adjunct Professor
Earth and Environmental Engineering
Columbia University
Mudd 918
500 West 120 Street
New York, NY 10027

Mainstreaming Potable Water Reuse in the United States:

Strategies for Leveling
the Playing Field

Presented by:

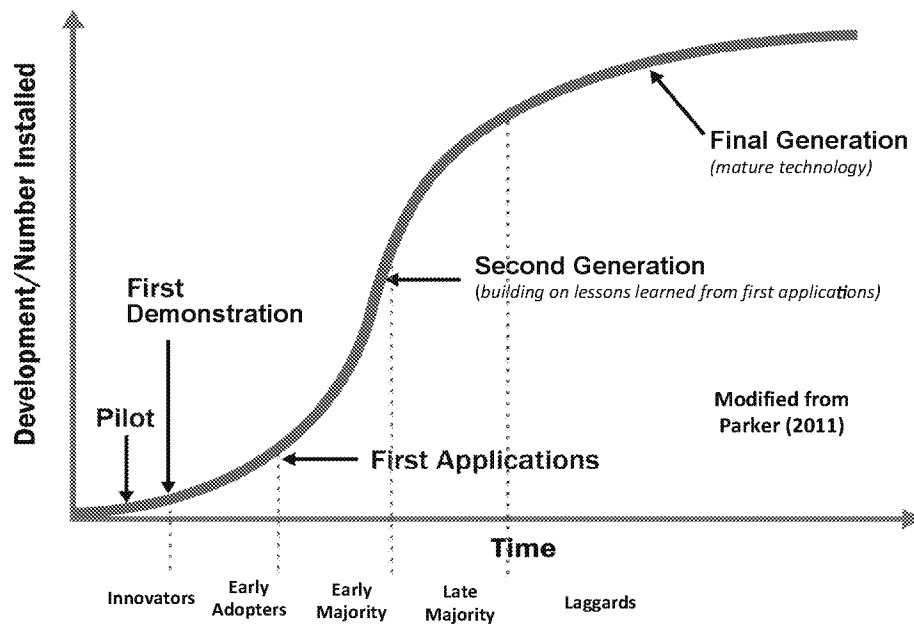
David Sedlak, UC Berkeley
Peter Grevatt, USEPA
Ted Henifin, HRSD



Water Research Foundation May 8, 2018

Welcome and thanks for attending. Goals: (1) inform about a unique and important workshop; (2) engage in a discussion about recommendations; (3) ID a path forward. The overall premise of the meeting was related to the question of whether or not something is holding back potable water reuse and what we as a community can do about it.

Technology Diffusion “S-Curve”



One way to think about potable reuse is as a new technology. It always takes time for technologies to diffuse because there are considerable barriers and risks to early adopters. As price comes down and regs harmonize it gets easier. The rate at which this occurs depends upon the nature of the technology.

Surface Water Storage

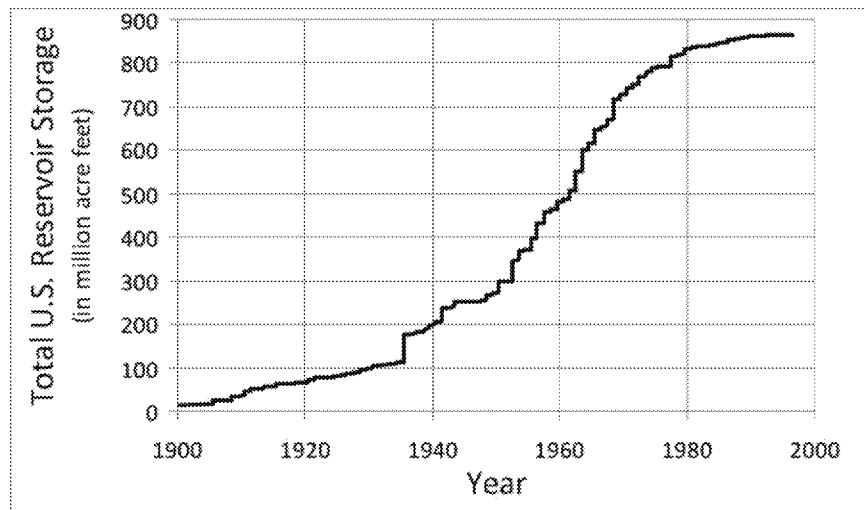
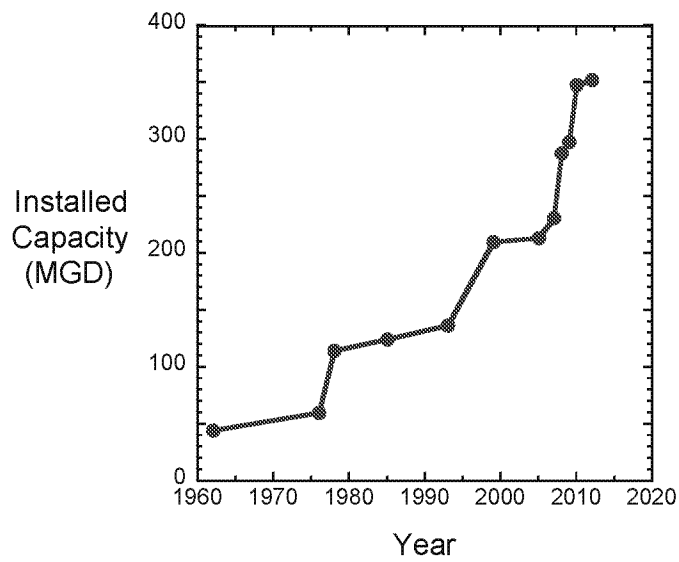


FIGURE 1-1 Reservoir capacity in the continental United States from 1900 to 1996.
SOURCE: Data from Graf (1999).

NRC (2012)

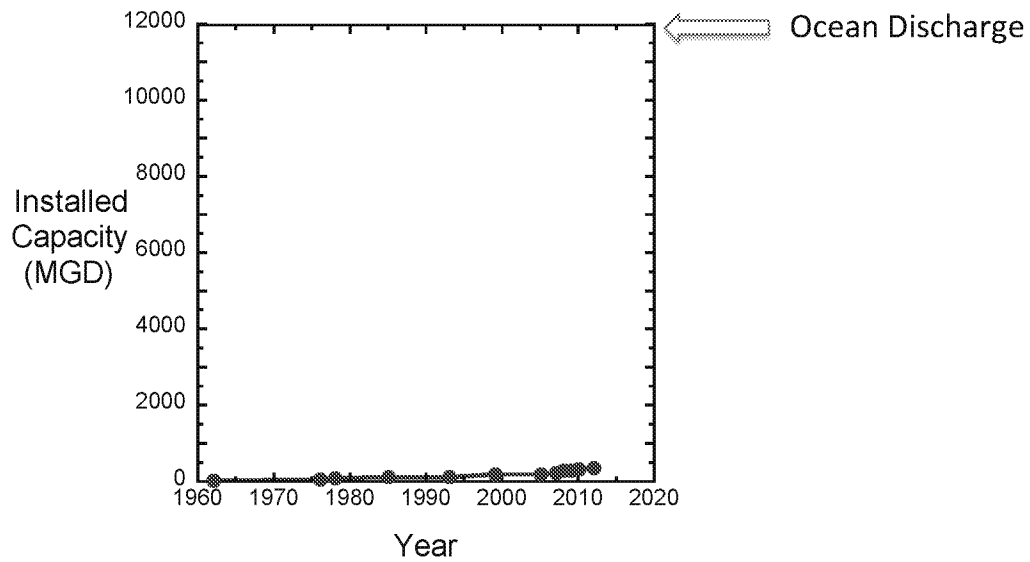
Consider this figure from the 2012 National Academies report on reuse. US reservoir expansion over a 40 year period. Technologies did improve, but it was probably the funding and government support that led to the great growth.

Surface Water Storage



If we plot the installed capacity of potable reuse projects in the US we might be able to convince ourselves that we are in the midst of a similar trend.

Surface Water Storage



But all of that changes when you consider the amount of available wastewater in the country (less than 5% of available capacity). The NRC 2012 report concluded that reuse has great potential to meet the nation's water needs and most people here think that potable is probably the way to go in many situations.

Is the Playing Field Level?

Slow rate of investment in potable water reuse may be attributable to limited needs for new water supplies

The slow rate of investment may be explained by the fact that it is only the rapidly growing cities in water stressed areas that need new supplies.

Is the Playing Field Level?

Slow rate of investment in potable water reuse may be attributable to limited needs for new water supplies

But...

Large capital investments are still being made in other supply options (e.g., storage, conservation and desalination)

But we still see capital improvement plans that select other sources instead of reuse.

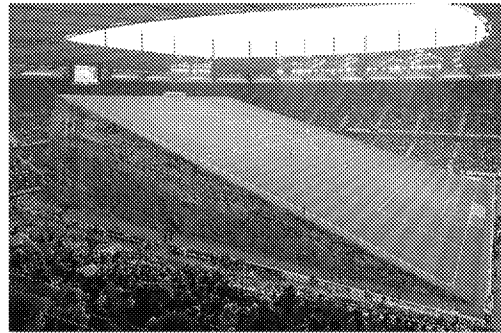
Is the Playing Field Level?

Slow rate of investment in potable water reuse may be attributable to limited needs for new water supplies

But...

Large capital investments are still being made in other supply options (e.g., storage, conservation and desalination)

Goal: Level the playing field



The purpose of our work shop was to identify those barriers and ways of leveling the playing field.

Workshop (October 25-27, 2017)



- Focus on institutional issues (no process flow diagrams!)
- Chatham House Rule (no attribution!)
- Professional facilitation (no need to write!)
- Diverse participants

With facilitation, logistical, and writing support from:



Meridian Institute
Connecting People to Solve Problems



Workshop Participants

Organizing Committee

- **Dave Smith**, USEPA Region 9
- **David Sedlak**, ReNUWit/UC Berkeley
- **Roger Dower**, The Johnson Foundation at Wingspread
- **Ed Archuleta**, University of Texas El Paso
- **Jeff Mosher**, WE&RF



Participants

- **Newsha Ajami**, Stanford University
- **Rich Atwater**, MWD
- **Laura Belanger**, Western Resource Advocates
- **Marlo Berg**, TCEQ
- **Jeff Bigg**, Tucson Water
- **Sean Bothwell**, California Coastkeeper
- **Marshall Brown**, Aurora Water
- **Jason Dadakis**, OCWD
- **Glen Daigger**, University of Michigan
- **Ralph Exton**, Suez Water Technologies
- **Denise Fort**, University of New Mexico
- **Daniel Gerritty**, UNLV
- **Peter Grevatt**, USEPA
- **Ted Henifin**, HRSD
- **Amber Kim**, WaterReuse Association
- **Jeff Lape**, USEPA
- **Justin Mattingly**, WRF
- **Ellen McDonald**, Alan Plummer Associates
- **Christina Montoya**, El Paso Water
- **Daniel Nix**, City of Wichita Falls
- **Christine Owen**, Hazen and Sawyer
- **Darrin Polhemus**, CA WRCB
- **Patricia Tennyson**, Katz & Associates

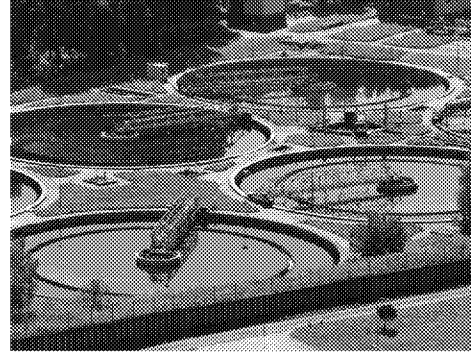
Facilitators:

- **Molly Mayo**, Meridian Institute
- **Kelsey Semrod**, Paradigm Environmental
- **Brad Spangler**, Meridian Institute

As I indicated, the participants were carefully selected and included folks from utilities, regulatory arena, NGOs and academia. Also had national representation, skewed toward states with more experience in reuse (Texas and CA).

Challenges: Real and Perceived

- **Public Acceptance**
 - failed projects from 1990s
 - lack of familiarity outside of regions with existing projects
- **Institutional Capacity**
 - need for trained, well resourced staff members
 - operator training and certification
- **Regulatory**
 - patchwork approach at state level
 - permit bottleneck
- **Financing**
 - integrating into capital improvement plans
 - funding multi-benefit projects

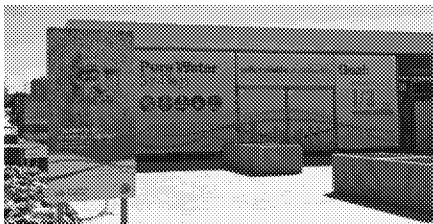


Stock photo

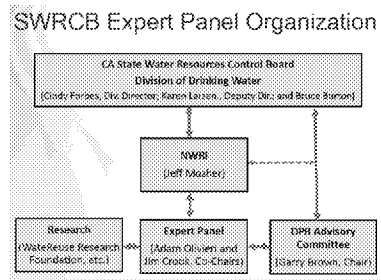
When we started putting together the meeting, we thought that a big part of our effort would be dedicated to identifying barriers to potable water reuse. But as we starting working as a group we saw that many of these barriers were perceived. We can call them challenges, but for every challenge, we could find examples of how they were overcome or at least good ideas about how to overcome them. (I may make a separate slide for each one)...

Legitimacy is Broader than Public Acceptance

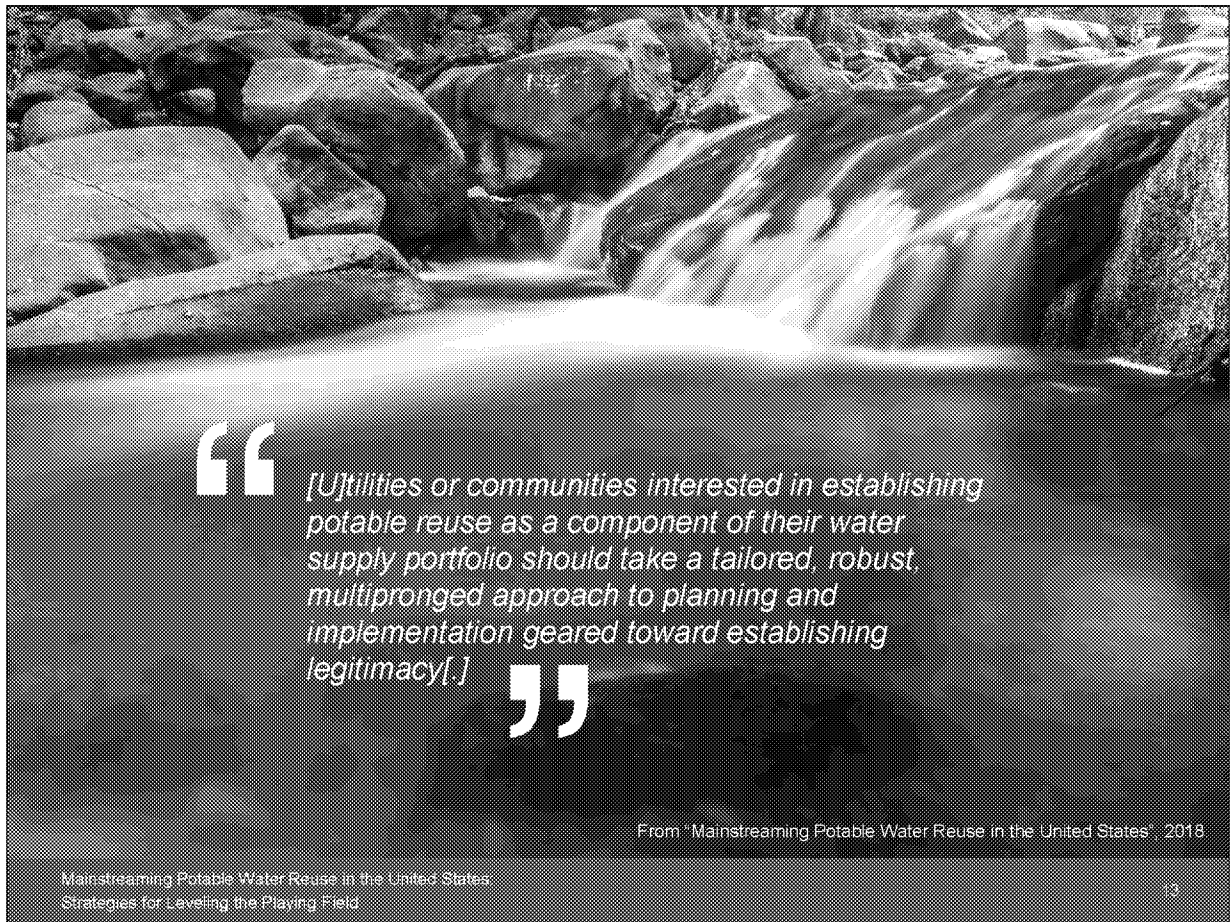
- **Pragmatic Legitimacy:** Project serves community interests
- **Moral Legitimacy:** Project is overseen by trusted institutions
- **Cognitive Legitimacy:** Potable water reuse is a daily experience
(see Harris-Lovett et al., 2015, ES&T, 49, 7552–7561)



Courtesy of City of San Diego



Introduce legitimacy framework



“

[U]tilities or communities interested in establishing potable reuse as a component of their water supply portfolio should take a tailored, robust, multipronged approach to planning and implementation geared toward establishing legitimacy[.]

”

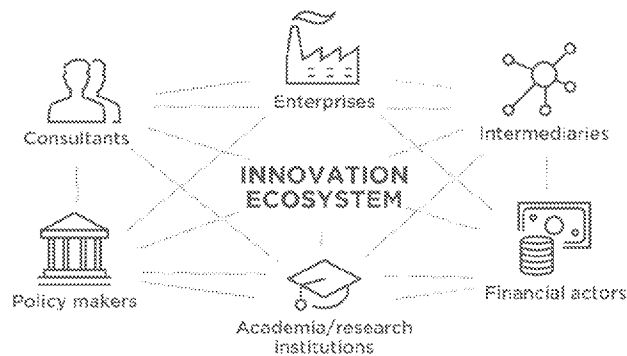
From "Mainstreaming Potable Water Reuse in the United States", 2018

Mainstreaming Potable Water Reuse in the United States:
Strategies for Leveling the Playing Field

13

One of our key recommendations is that utilities think in these terms from the start. Ted comes on at this point and discusses how he employed some of these approaches to rapidly advance the SWIFT project (without being aware of a specific framework).

Innovation Ecosystems Enable Potable Water Reuse



Explain what is meant by innovation ecosystems and how they have supported the growth of reuse in SoCal. Discuss the challenge at the national level. WRF is filling some of this void on the technical issues by enabling communication but there is a need for more support and dialog at the national level. This workshop and today's meeting is part of an effort to address this issue.

"EPA supports water reuse as part of an integrated water resources management approach developed at the state and local level to meet the water needs of multiple sectors including agriculture, industry, drinking water, and ecosystem protection." – Peter Grevatt, Director, U.S. EPA Office of Groundwater and Drinking Water

Peter comes on at this point and makes a statement about how EPA HQ sees its role in facilitating the innovation ecosystem.

Recommendations for Advancing Individual Projects

- Assess/improve utility's reputation with customers and decision makers
- Communication, outreach, and involvement strategies must build trust and credibility through comprehensive engagement and transparency
- External expert panels improve projects and advance legitimization
- Embrace integrated water management and be prepared to navigate applicable governance structures
- Financing plans should consider long-term capital improvement and asset management needs, as well as alternative financing mechanisms

Leveling the Playing Field

- Create protective and workable regulatory structures at the state level.
- Develop approaches for overcoming governance fragmentation
- Understand and resolve water rights issues
- Create incentives that account for full benefits of potable water reuse
- Reassess relationship between planned and unplanned water reuse
- Develop certification/training programs for operator and permit writers
- Foster innovation ecosystems and knowledge sharing

THANK YOU

David Sedlak
sedlak@berkeley.edu

For more information and a link to the report:
<http://bwc.berkeley.edu/advancing-dialogue-potable-water-reuse>

Message

From: Grevatt, Peter [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=D3CAA0C39EBE44CB9D3AE44DA7543733-GREVATT, PETER]
Sent: 6/12/2018 11:26:49 PM
To: Beate Wright [bwright@waterrf.org]
Subject: Re: Connect?

I only put your email in my contacts and I have replaced work phones since we last exchanged texts. Can you either text me at 2027130825 or email me your cell number if you want to coordinate this evening? Alternatively, we can just connect and in the AM. Thx.

Sent from my iPhone

On Jun 11, 2018, at 5:56 PM, Beate Wright <bwright@waterrf.org> wrote:

Hi Peter. I'd love to connect. I will be at breakfast. If schedules don't work out while at ACE- I'd love to connect sometime after ACE.

Beate M. Wright, PE

Sent from my iPhone

On Jun 11, 2018, at 5:32 PM, Grevatt, Peter <Grevatt.Peter@epa.gov> wrote:

I'll be at the WRF breakfast in the morning. Please have a pretty full schedule tomorrow, but please let me know if you'd like to connect.

Sent from my iPhone

Message

From: Grevatt, Peter [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=D3CAA0C39EBE44CB9D3AE44DA7543733-GREVATT, PETER]
Sent: 12/11/2018 12:22:43 PM
To: Heather Gary [heatherlgary@yahoo.com]; Peter Grevatt [pgrevatt@gmail.com]
Subject: Fwd: Inside EPA: Grevatt to head Water Research Foundation

Press does not get any better!

Sent from my iPhone

Begin forwarded

Grevatt to head Water Research Foundation

December 10, 2018

EPA's departing drinking water chief Peter Grevatt will begin work in February as the chief executive officer of the Water Research Foundation (WRF), an organization that conducts research on all aspects of the water sector, including drinking water, wastewater, stormwater and water reuse.

American Water Works Association (AWWA) President David Rager and CEO David LaFrance praised Grevatt's experience in a [Dec. 10 letter](#) to him in his new role.

"Through our many face-to-face and written interactions, you have always demonstrated a strong commitment to science-based water policy that protects public health," the letter says. "Your willingness to listen attentively to the unique perspectives of many stakeholders -- public health professionals, researchers, environmental advocates, water utility engineers -- is an extraordinary example of strong leadership and a benefit to all who value safe, affordable water. Your experience at EPA will be invaluable to WRF as it produces ground-breaking water research in the years ahead."

AWWA established WRF in 1966, with a focus on drinking water research. In January 2018, WRF merged with the Water Environment & Reuse Foundation, following WRF's expanded focus over the past two decades to include projects on wastewater, reuse, desalination, and stormwater.

Grevatt last month [announced his retirement](#) from EPA after 30 years of service, telling *Inside EPA* that he was "proud of the great work that I have been able to participate in throughout my federal service," and saying that he planned to continue his career protecting human health and the environment.

Grevatt most recently served EPA as the director of the Office of Ground Water and Drinking Water (OGWDW) and oversaw the agency's policy efforts related to per- and polyfluoroalkyl substances (PFAS).

EPA officials said Dec. 6 during the annual meeting of the agency's National Drinking Water Advisory Council that Jennifer McLain, OGWDW's deputy director, will serve as the office's acting director following Grevatt's retirement. McLain's career at EPA has included stints in both the drinking water office and the Office of Chemical Safety and Pollution Prevention, dealing with pesticides.

Message

From: Grevatt, Peter [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=D3CAA0C39EBE44CB9D3AE44DA7543733-GREVATT, PETER]
Sent: 6/12/2018 1:12:37 AM
To: Beate Wright [bwright@waterrf.org]
Subject: Re: Connect?

Thanks Beate. I think I have 4 speaking events tomorrow, but let's try to connect at breakfast

Sent from my iPhone

On Jun 11, 2018, at 5:56 PM, Beate Wright <bwright@waterrf.org> wrote:

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Sent: 12/10/2018 9:11:33 PM
To: Hughes, Jeffrey [jhughes@sog.unc.edu]
Subject: Re: WRF Announces New CEO

I hadn't thought of that. Perhaps if I have difficulty covering multiple speaking engagements I can call on you to split the duty with me!

I will want to talk with you soon after I start to get your perspectives on how I can strengthen the organization going forward!

Sent from my iPhone

On Dec 10, 2018, at 4:08 PM, Hughes, Jeffrey <jhughes@sog.unc.edu> wrote:

I guess people are now going to come to me for research funding instead of waivers..... Congratulations!

From: The Water Research Foundation <announcements@waterrfnews.org>
Sent: Monday, December 10, 2018 2:28 PM
To: Hughes, Jeffrey <jhughes@sog.unc.edu>
Subject: WRF Announces New CEO

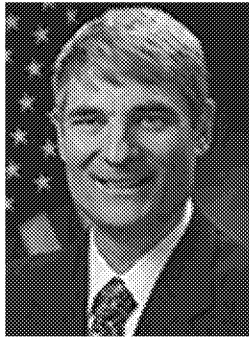
We Welcome Peter Grevatt to Our Team

[View this mailing online](#)



Announcement

The Water Research Foundation Names Peter Grevatt as new Chief Executive Officer



<!--[if
!vml]--
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[endif]-->

December 10, 2018 - The Water Research Foundation (WRF) has named Dr. Peter Grevatt as Chief Executive Officer, effective in February 2019.

"We are thrilled that Peter will be leading The Water Research Foundation team," said Kevin Shafer, co-Chair of the WRF Board of Directors. "Throughout his career, Peter has demonstrated strong leadership and exceptional communication skills, combined with extensive water research knowledge. He's an experienced and

respected thought leader throughout the water sector and an ideal fit to lead WRF into the future."

Grevatt has over 30 years of experience leading the implementation of public health and environmental protection programs including significant national leadership experience in the water sector. Most recently, Grevatt served as Director of EPA's Office of Ground Water and Drinking Water (OGWDW). At OGWDW, he was responsible for ensuring the safety of the nation's drinking water supply through the development and implementation of national drinking water standards, oversight and funding of state drinking water programs, and the implementation of source water protection and underground injection control programs.

Prior to joining OGWDW in October 2012, Grevatt served as the Director of the Office of Children's Health Protection and as the Senior Advisor to EPA's Administrator for Children's Environmental Health. Grevatt has held leadership roles in EPA's national hazardous waste and water quality programs. Grevatt received his MS and PhD degrees in Basic Medical Sciences from New York University Medical Center and earned his bachelor's degree in Biology from Earlham College.

"I could not be more excited to join with the great professionals at The Water Research Foundation," said Grevatt. "The Foundation is perfectly positioned to collaborate across the water sector, lead innovation in integrated water resources management, and provide the highest level of service to our subscribers and the public."

Grevatt takes over as CEO during a time of unprecedented change and opportunity for The Water Research Foundation. In January 2018, the Water Environment & Reuse Foundation and the Water Research Foundation integrated to become the world's leading water research organization. The integration represented the evolution of water research issues, the overlap between water, wastewater, stormwater, and reuse, and efficiencies to be gained through a consolidated research program. The new organization serves as a model for collaboration across the water sector.

While major strides have been made in the last year, much work remains in not only consolidating WRF's research programs, subscriber services, and other programs, but tackling pressing water sector issues such as aging infrastructure, dwindling water supplies, and lead in drinking water, plus opportunities in resource recovery and technology development and testing.

Grevatt replaces Robert Renner, who will retire. Renner has led the Water Research Foundation since 2005. Under Renner's leadership, the legacy Water Research Foundation successfully transitioned from primarily a drinking water organization to focusing on the entire water sector, and then the integration with WE&RF.

"Rob's technical knowledge, communication skills, leadership and management capabilities, and ability to nurture professional relationships and trust throughout the water community have served WRF well, especially during this transition to a One Water approach," said Chuck Murray, WRF Board of Directors co-Chair. "Rob's strong commitment to improving subscriber value is obvious in the many new ways WRF now prioritizes research and communicates results. It has been a great privilege to work with Rob for these last 14 years."

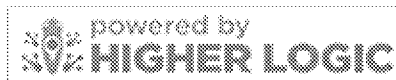
The Water Research Foundation
6666 W. Quincy Avenue
Denver, CO 80235-3098
(303) 347.6100



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Message

From: Grevatt, Peter [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=D3CAA0C39EBE44CB9D3AE44DA7543733-GREVATT, PETER]
Sent: 12/10/2018 8:59:50 PM
To: Radhika Fox [RFox@uswateralliance.org]
Subject: Re: WRF Announces New CEO

Thanks Radhika! I look forward to finding a time to meet with you early in my tenure at TWRF!

Sent from my iPhone

On Dec 10, 2018, at 3:55 PM, Radhika Fox <RFox@uswateralliance.org> wrote:

What an excellent choice 😊

From: The Water Research Foundation <announcements@waterrfnews.org>
Sent: Monday, December 10, 2018 11:28 AM
To: Radhika Fox <RFox@uswateralliance.org>
Subject: WRF Announces New CEO

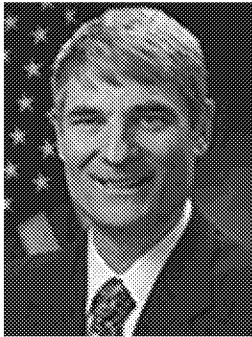
We Welcome Peter Grevatt to Our Team

[View this mailing online](#)



<!--[if !vml]--><!--[endif]-->

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[endif]-->

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The Water Research Foundation
6666 W. Quincy Avenue
Denver, CO 80235-3098
(303) 347.6100

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Message

From: Grevatt, Peter [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=D3CAA0C39EBE44CB9D3AE44DA7543733-GREVATT, PETER]
Sent: 4/19/2018 12:00:08 PM
To: Julie Minton [jminton@waterrf.org]; Bart Weiss [weisst@hillsboroughcounty.org]; peter.colohan@noaa.gov
CC: Rob Renner [rrenner@waterrf.org]; Wadlington, Christina [Wadlington.Christina@epa.gov]; Kelsey Beveridge [kbeveridge@waterrf.org]; Courtney Tharpe [CTharpe@waterrf.org]; Tiago, Joseph [Tiago.Joseph@epa.gov]
Subject: RE: WRF Research Conference Opening Session on May 7th in Atlanta

Yes, this is all good. We'll follow-up shortly to let you know about slides. Joe Tiago and I will be arriving on Sunday afternoon and will be delighted to join you at the reception. Thanks, P. Grevatt

From: Julie Minton [mailto:jminton@waterrf.org]
Sent: Tuesday, April 17, 2018 7:39 AM
To: Bart Weiss <weisst@hillsboroughcounty.org>; Grevatt, Peter <Grevatt.Peter@epa.gov>; peter.colohan@noaa.gov
Cc: Rob Renner <rrenner@waterrf.org>; Wadlington, Christina <Wadlington.Christina@epa.gov>; Kelsey Beveridge <kbeveridge@waterrf.org>; Courtney Tharpe <CTharpe@waterrf.org>
Subject: WRF Research Conference Opening Session on May 7th in Atlanta

Dear Peter, Peter and Bart,

Thank you all so much for agreeing to be part of the opening session at the WRF Research Conference! We are looking forward to seeing you on the morning of Monday, May 7th in downtown Atlanta. Here is the lineup of speakers for the morning:

Opening Session - Monday May 7th 8:30 - 10am

Facilitator – Rob Renner, CEO WRF

8:30am Welcome/introductions – Rob Renner

8:45am About the new WRF – WRF Board member Bart Weiss

9:00am Peter Grevatt, EPA – EPA priorities and water trends, Recent Release of Potable Reuse Compendium

9:20/25am - 5-10 min Q&A

9:30am Peter Colohan, NOAA – Climate impacts and need for future water management and resiliency

9:50/55am - 5-10 min Q&A

Questions/Requests:

- Does this all sound ok? Please let me know if you need more (or less) time, and feel free to adjust the scope of your talk.
- Please confirm if you will have powerpoint slides. We will have a podium/laptop so slides are welcome.
- Please let me know when you will arrive in Atlanta. If possible, it would be nice to all meet on Sunday evening at the Welcome Reception (5:30-6:30pm).
- On Monday morning, please plan pick up your registration folder/name badge by 8am and meet in the ballroom by 8:15 (registration and breakfast starts at 7:30am)
- One of our communications team members, Kelsey Beveridge, is working on producing content about the conference for World Water: Reuse & Desalination Magazine, and would like to feature highlights from your keynote addresses in an interview format. Kelsey is cc'ed here and will follow up with more details.

Please let us know if you have any questions at all! We thank you again for being a part of the opening session to kick off this great event, and look forward to hearing back from you on the above questions.

Best regards,

Julie

Julie Minton
Director of Strategic Initiatives
The Water Research Foundation
jminton@waterrf.org
301-922-7860

Message

From: Grevatt, Peter [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=D3CAA0C39EBE44CB9D3AE44DA7543733-GREVATT, PETER]
Sent: 2/15/2018 8:21:51 PM
To: John Albert [jalbert@waterrf.org]
Subject: RE: Water Research Foundation: Research Conference

Thanks John. It was great to have to opportunity to visit with the excellent staff and management team at TWRF yesterday!

Thanks for your kind invitation below. It would be helpful if you could give me a sense of whether you would be looking for me to do one of the two plenary talks or whether you are looking for this to be presented in one of your breakout sessions. If it is the former, I would want to present on the compendium but also expand the topic to address several of the issues you have listed below. If it is the latter, I would be glad to see whether we could have one of my staff travel down to participate in that session.

Thanks, P.G.

From: John Albert [mailto:jalbert@waterrf.org]
Sent: Wednesday, February 14, 2018 3:26 PM
To: Grevatt, Peter <Grevatt.Peter@epa.gov>
Subject: Water Research Foundation: Research Conference

Peter,

Thank you again for coming out and interacting with Foundation folks. I have received so many positive responses from our group about your talk and following discussion. I hope it was equally valuable to you as well.

I wanted to discuss our upcoming research Conference with you and see if you would be available to give a talk about the newly released Potable Reuse Compendium.

Thank you again for coming out it MUCH appreciated!

John

2018 Water Research Foundation Conference

Advancing Reuse & Integrated Water

The latest research addressing the challenges of integrated water management and reuse will be presented at the 2018 Water Research Foundation Conference (a continuation of the 20-year tradition of the former WaterReuse Research Foundation) in downtown Atlanta, GA on May 6-8, 2018. The Research Conference is designed to help communities prepare for the future with a comprehensive program offering innovative approaches and creative solutions for managing our water resources.

This conference is where water professionals and researchers meet to network, exchange ideas, and envision the future. The program will include two keynote sessions, plenary/panel discussions, multiple tracks of sessions, poster presentations, and technical tours.

Water Reuse Topics

- Indirect potable reuse (groundwater and surface water augmentation)
- Direct potable reuse

- Industrial reuse
- Produced water (from oil and gas extraction)
- Agricultural reuse
- Source control for potable reuse
- Water quality: Microbiologicals and pathogens
- Water quality: Constituents of emerging concern (unregulated chemicals, trace organic chemicals, pharmaceuticals and personal care products, etc.)
- Monitoring (online, water quality, treatment performance, etc.)
- Next generation monitoring options for chemicals and microbiologicals
- Treatment technologies and treatment systems
- Treatment performance and reliability
- Concentrate management and treatment
- Operations, operator training, and operator certification
- Planning and case studies
- Economic assessments of reuse
- Public engagement, education, and outreach
- Regulations and guidance

Integrated Water Topics

- Integrated water (One Water) management
- Tools and management practices
- Collaboration across sectors (land use planning, transportation, energy, agriculture, forestry)
- Watershed management
- Stormwater management
- Innovative technologies and approaches
- Modeling tools and decision support systems
- Green infrastructure
- Low Impact Development (LID)
- Decentralized systems and onsite treatment systems
- Stream restoration as part of integrated water
- Linking management practices to receiving water impacts
- Planning and case studies
- Implementation and best practices
- Institutional considerations
- Partnerships and stakeholder participation
- Flexible and adaptable urban water systems
- Climate resiliency and addressing uncertainty
- Economic tools and assessing benefits and co-benefits
- Food-Energy-Water nexus

Who Should Attend

- Academics
- Consultants
- Engineers
- Government Officials
- Planners
- Scientists
- Water and Wastewater Utility Officials
- Water Agency Managers

From: Grevatt, Peter [<mailto:Grevatt.Peter@epa.gov>]
Sent: Thursday, January 11, 2018 8:44 AM
Subject: Release of EPA's 2017 Potable Reuse Compendium

Dear colleagues,

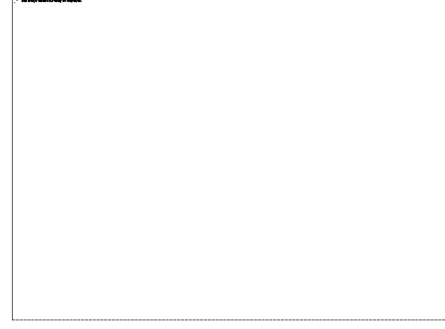
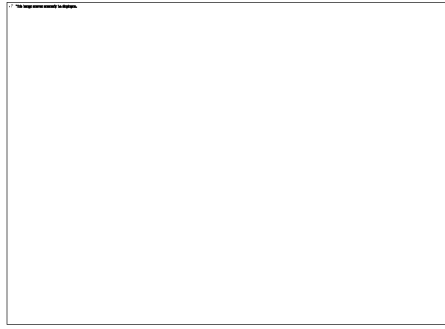
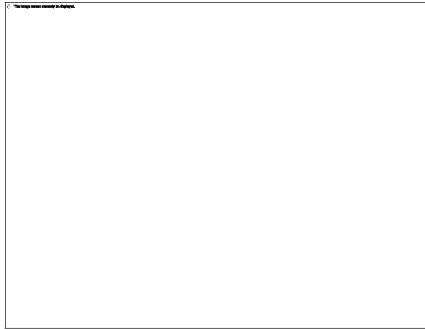
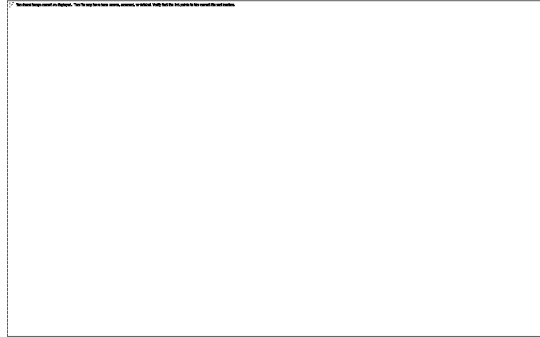
Today, EPA is announcing the release of the *2017 Potable Reuse Compendium*. This document supplements the *2012 Guidelines for Water Reuse* and provides a current look at potable water reuse practices, including direct potable reuse. The compendium was developed in partnership with CDM Smith and with input from state and industry partners, including WE&RF, WRF, AWWA, ASDWA, Texas, California, and Colorado. The compendium addresses multiple topics, including the extent of potable water reuse in the United States, current treatment technologies, and costs of potable water reuse. Additionally, it includes seven U.S. case studies that illustrate indirect and direct potable reuse approaches.

I greatly appreciate the review and input you and others in your organization have provided in the development of the document.

After 1pm today, the document will be available on www.epa.gov/safewater. If you have additional questions or need more information, please feel free to contact me or Ryan Albert of my staff at (202) 564-0763 or albert.ryan@epa.

Message

From: Courtney Tharpe [CTharpe@waterrf.org]
Sent: 5/14/2018 8:05:08 PM
To: Grevatt, Peter [Grevatt.Peter@epa.gov]
Subject: Water Research Foundation Conference - Evaluation and Feedback
Attachments: ATT00001.txt; image002.emz; image003.emz; image004.emz; image005.emz



Dear Peter,

Thank you for attending the 2018 Water Research Foundation Conference!

We would love to collect your feedback as we move to determine the future of our WRF Research Conference, given the integrated Foundation and expansion of research topics.

[Click here](#) to take a short survey and give your feedback on the conference.

Your help is greatly appreciated!

Sincerely,
Julie Minton and Courtney Tharpe